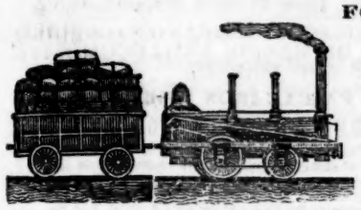
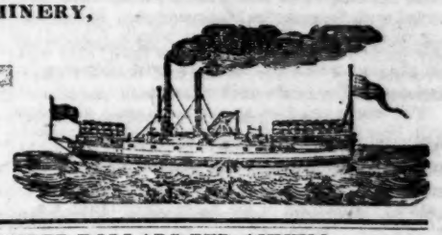
AMERICAN RAILROAD JOURNAL,

AND GENERAL ADVERTISER

FOR RAILROADS, CANALS, STEAMBOATS, MACHINERY, AND MINES.





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THE AMERICAN RAILROAD JOURNAL s the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

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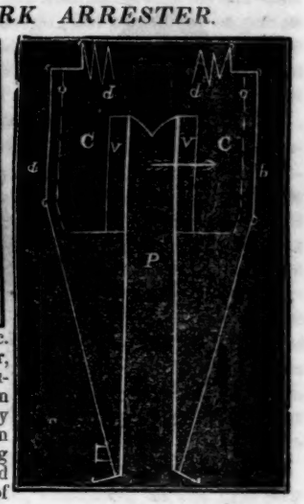

TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved SPARK ARRESTER, recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both passenger and freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits:

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Orders for these Chimneys and Arresters, addressed to the subscribers, or to Messrs. Baldwin & Whitney, of this city, will be promptly executed.

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Philadelphia, Pa., April 6, 1844.

*** The letters in the figures refer to the article given in the *Journal* of June, 1844. ja45

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W. Mc. C. CUSHMAN, *Civil Engineer*,
Albany, N. Y.

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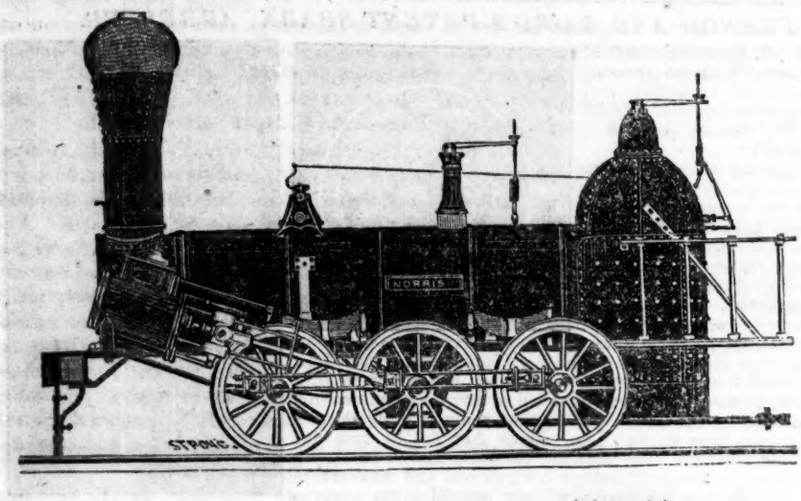

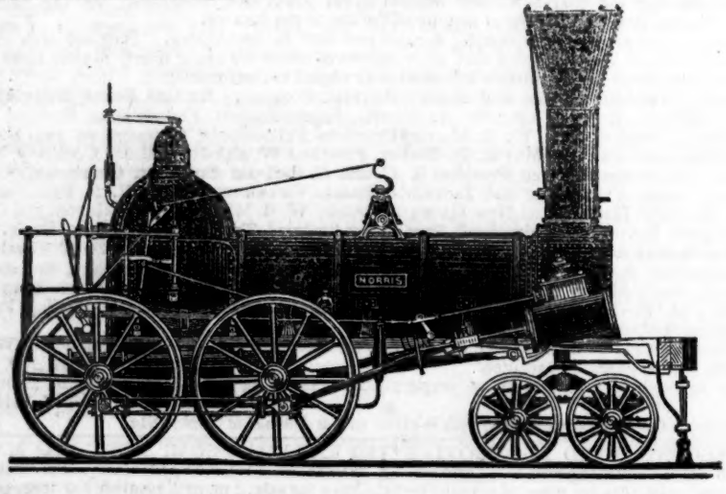

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"	2.	14	"	"	"		× 24	"	"
"	3,	14½	"	"	"		× 20	"	"
"	4,	12½	"	"	"		× 20	"	"
"	5,	11½	"	"	"		× 20	"	"
"	6,	10½	"	"	"		× 18	"	"

With Wheels of any dimensions, with their Patent Arrangement for Variable Expansion.

Castings of all kinds made to order: and they call attention to their Chilled Wheels, for the Trucks of Locomotives, Tenders and Cars.

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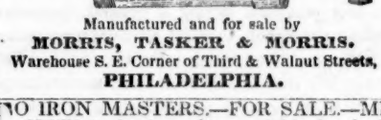

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TO IRON MASTERS.—FOR SALE.—MILL SITES in the immediate neighborhood of *Bituminous Coal* and *Iron Ore*, of the first quality, at Ralston, Lyoming Co., Pa. This is the nearest point to tide water where such coal and ore are found together, and the communication is complete with Philadelphia and Baltimore by canals and railways. The interest on the cost of water power and lot is all that will be required for many years; the coal will not cost more than $1 to $1 25 at the mill sites, without any trouble on the part of the manufacturer; rich iron ore may be laid down still more cheaply at the works; and, taken together, these sites offer remarkable advantages to practical manufacturers with small capital. For pamphlets, descriptive of the property, and further information, apply to Archibald McIntyre, Albany, to Archibald Robertson, Philadelphia, or to the undersigned, at No. 23 Chambers street, New York, where may be seen specimens of the coal and ore.

W. R. CASEY, *Civil Engineer*,

VALUABLE PROPERTY ON THE MILL Dam For Sale. A lot of land on Gravelly Point, so called, on the Mill Dam, in Roxbury, fronting on and east of Parker street, containing 68,497 square feet, with the following buildings thereon standing.

Main brick building, 120 feet long, by 46 ft wide, two stories high. A machine shop, 47x43 feet, with large engine, face, screw, and other lathes, suitable to do any kind of work.

Pattern shop, 35x32 feet, with lathes, work benches, &c.

Work shop, 86x35 feet, on the same floor with the pattern shop.

Forge shop, 118 feet long by 44 feet wide on the ground floor, with two large water wheels, each 16 feet long, 9 ft diameter, with all the gearing, shafts, drums, pulleys, &c., large and small trip hammers, furnaces, forges, rolling mill, with large balance wheel and a large blowing apparatus for the foundry.

Foundry. at end of main brick building, 60x45½ feet two stories high, with a shed part 45½x20 feet, containing a large air furnace, cupola, crane and corn oven.

Store house—a range of buildings for storage, etc., 200 feet long by 20 wide.

Locomotive shop, adjoining main building, fronting on Parker street, 54x25 feet.

Also—A lot of land on the canal, west side of Parker st., containiug 6000 feet, with the following buildings thereon standing:

Boiler house 50 feet long by 30 feet wide, two stories.

Blacksmith shop, 49 feet long by 20 feet wide.

For terms, apply to HENRY ANDREWS, 48 State st., or to CURTIS, LEAVENS & CO., 106 State st., Boston, or to A. & G. RALSTON & Co., Philadelphia. ja45

RAILWAYS IN SCOTLAND.

We give from Herapath's Railway Journal the following "Report of the Railway Department of the Board of Trade, on the Schemes for extending railway communication in Scotland," for the purpose of showing the views of that body in relation to railways.

Railway Department, Board of Trade
Whitehall, 13th March, 1845.

The Aberdeen railway: Caledonian; Clydesdale Junction; Dundee and Perth; Edinburgh and Northern; Edinburgh and Glasgow—Stirling Branch; Edinburgh and Hawick; Glasgow, Barrhead and Neilston; Glasgow and Ayr—Cumnock Branch; Glasgow, Dumfries and Carlisle; Glasgow Junction; Glasgow Harbor Union; Scottish Central; Scottish Midland; have determined on submitting the following report thereon for the consideration of parliament.

The above schemes may be classed according to the leading objects which they have in view.

1. The Caledonian railway, on the one hand, with the Clydesdale and other minor railways, which it is proposed to use in entering Glasgow; and on the other hand the Glasgow, Dumfries and Carlisle, and Edinburgh and Hawick, in connection with the existing Edinburgh and Glasgow and Glasgow and Ayr railways, and the North British railway, sanctioned last year, may be considered as competing schemes for completing the railway communication south of the Forth and Clyde between Scotland and England.

2. The Scottish Central (in continuation of the line of the Caledonian from Castle Cary on the Edinburgh and Glasgow railway to Perth;)

The Scottish Midland, (in continuation of the Scottish Central from Perth to Forfar;)

The Edinburgh and Glasgow—Sterling Branch;

The Edinburgh and Northern (from Burntisland, on the Frith of Forth, opposite to Edinburgh, through Fife to Perth;)

The Dundee and Perth: and the Aberdeen, (from Friockheim, a point midway on the Arbroath and Forfar railway to Aberdeen;) are schemes proposed for extending railway communication north of the Forth and Clyde, or more correctly speaking, north of the line of the present Edinburgh and Glasgow railway.

3. The Glasgow, Barrhead and Neilston, and Glasgow and Ayr—Barrhead and Neilston Branch, are competing schemes for supplying local accommodation to a manufacturing district in the vicinity of Glasgow.

4. And finally, the Glasgow Junction and Glasgow Harbor Union, are schemes for extending existing railways in the town of Glasgow, with a view to effect a junction with other railways, and to obtain a readier access to the river for coals and minerals. Both these schemes, however, appear to depend so materially on considerations of private interest, which we are precluded from entertaining, and on detailed evidence as to local circumstances, that we do not feel ourselves justified in reporting any decided opinion respecting them.

The other lines referred to are delineated on the map accompanying this report, a reference to which will afford the readiest explanation of their respective objects and direction.

It is evident that a consideration of these lines raises the whole question of deciding on the best permanent system of railway communications for Scotland generally.—The sanction of the North British railway from Edinburgh to Berwick, last year, together with the completion of the eastern chain of English lines up to Newcastle, warrant us in assuming as an admitted fact that this eastern line of communication from London to Edinburgh will be completed, but with the exception of this fact, the whole question of railway communication for Scotland may be considered as an open one.

In approaching it, we will endeavor to consider first, what at the cardinal points to be attended to, in laying out a system of railway communications for Scotland.

Edinburgh, Glasgow and Perth are evidently the three points upon which we must fix our attention, as determining the direction of the leading railways. Edinburgh, as the capital, and seat of the courts of justice and university, and Glasgow as the commercial and manufacturing capital and city of largest population, are the great centres to which the principal streams of traffic in Scotland converge, and from which the principal connection with England is maintained.

Perth, again, from the natural configuration of the country, with the Grampians on the one hand, and the estuaries of the Forth and Tay on the other, is evidently the point of convergence for the traffic of the northern portion of the kingdom.

In railway communication the preservation of an entire and unbroken line is a point of vital importance, and in our report on the Worcester and Wolverhampton district, to which we here beg to refer, we have pointed out numerous practical instances of the very great expense, delay and inconvenience which have been found to result from any break in this entireness of communication, occasioned by the meeting of different gages. A break occasioned by the intervention of an arm of the sea or wide navigable river is, of course, an evil of a still more formidable character. Considered merely with reference to time, a short ferry would, generally speaking, involve a delay equivalent to several additional miles of travelling on an unbroken line of railway, a disadvantage which would be still further increased, if, as seems probable, the rate of railway travelling should, by the continued improvements in the construction of the locomotive engine, become considerably accelerated.

For the conveyance of goods, coals, cattle, agricultural produce, etc., (which constitutes a most important portion of the benefits likely to result to the community from the introduction of railways,) the loss of time represents but a small portion of the inconveniences arising from any break in the chain of communication.

In fact the inconvenience to all traffic of this description is so great as to justify us in assuming, as the most indispensable point to be attended to, in considering the extension of a trunk line for the northern portion of Scotland, that such line shall afford an entire and unbroken communication.

Now with this view, Perth and Stirling, which are the points at which the navigation of the estuaries of the Forth and Tay ceases evidently determine the direction of the trunk line for the north of Scotland. A line through Fife may give local accommodation and be used for a portion of the traffic from Dundee, and the towns on the east coast to Edinburgh; but can never be put in competition with an unbroken inland line by Stirling and Perth, as a trunk line for the connection of the north of Scotland with Edinburgh, Glasgow and England.

The Scottish Central line appears to comply with these conditions and to be unexceptionable in its direction as the first link of a great trunk line for the north. The gradients of these lines are in parts, rather severe, but not more so than are perfectly practicable and have been frequently sanctioned, and are as necessary from the nature of the country, in order to avoid any great expense. The works are not on the whole very heavy, and the estimates of traffic, which have been carefully prepared, appear to show a fair probability of a sufficient return on the capital required.

We conclude, therefore, as the first step in our inquiry into the question of railway communications for Scotland, that the Scotish Central line is one which, upon public grounds, appears to deserve the sanction of the legislature.

As a consequence of this conclusion, it follows that we must express an unfavorable opinion of the Edinburgh and Glasgow company's Sterling branch. This branch competes, and is manifestly inconsistent with the southern portion of the Scottish Central line; and although in itself it might have been an useful and proper undertaking, it is clear that if our views, already stated, are correct, it must give way to one of much larger scope and national importance.

We now come to the more difficult question of railway communications south of Edinburgh and Glasgow.

We have already described generally the two competing systems proposed; which, for the sake of brevity, we may designate as the "Caledonian" and "Dumfreys and Hawick" systems.

The Caledonian line consists of a main trunk line of 73 miles in length from Carlisle, in the most direct practicable route, to a point near Lanark, where two branches fork off, one of 27½ miles in length, to Edinburgh, the other towards Glasgow. The connection with Glasgow is effected by two

routes, and partly by means of railways already formed. From the fork or point of junction with the Edinburgh branch, the Glasgow branch diverges north westward till it joins the Wishaw and Coltness railway, which it uses for four miles to Motherwell. At this point the proposed Clydesdale railway branches off to Glasgow, to the south side of the Clyde, giving an access to the quays on the south side of the river, and forming a junction with the Glasgow and Ayr and Glasgow and Greenock railways; while the Wishaw and Coltness line, in connection with the Glasgow and Garnkirk, continues the communication to the north side of Glasgow, and to a junction with the Edinburgh and Glasgow railway. Agreements have been entered into between the Caledonian company and the company of proprietors of the minor connecting lines above mentioned, by which the latter bind themselves to adapt their lines to the traffic of the Caledonian company, and to allow the use of them on moderate fixed terms, giving a priority to this traffic over their own local traffic.

The Caledonian scheme further comprises a line from the Glasgow and Garnkirk line, a little beyond Motherwell, to join the Scottish central line at its southern terminus, at Castle Cary.

The whole Caledonian scheme, therefore, will consist of the following parts:

1. New railway to be made,

	Miles.	Chains.
Caledonian trunk line from Carlisle to point of divergence at Carnwarth,	72	55
Point of divergence to Edinburgh	27	40
Ditto to Wishaw and Coltness railway,	12	10
Castle Cary branch,	10	3
Dumfries branch,	13	44
Minor Junctions, etc.,	0	65
Total of Caledonian,	136	57
Clydesdale Junction,	10	56
	147	33

2. Existing railways, forming part of the system,

Wishaw and Coltness line, and portion of Monkland and Kirkintilloh,	11	0
Garnkirk and Glasgow,	8	20
Pollock and Govan (forming part of Clydesdale line,)	2	62
Total of existing railway,	22	2
Total of Caledonian system,	169	35

This system would afford a very complete railway communication from Glasgow, Edinburgh, and the north of Scotland, to all parts of England, with the exception of the eastern portion, the communication with which may be assumed to be already supplied by the east coast line.

The competing system proposes to attain the same general objects in the following manner:

1. By the proposed Glasgow, Dumfreys and Carlisle line, in connection with the existing Glasgow and Ayr line, giving a western line of communication from Glasgow to England.

2. By a line from Edinburgh to Hawick, which the promoters offer to pledge themselves to continue to Carlisle, giving a communication from Edinburgh to the west of England and the manufacturing districts.

3. By the Glasgow Junction railway, intended to connect by an unbroken communication, the Edinburgh and Glasgow, and railways north of the Clyde, with the Glasgow and Ayr, and Glasgow, Dumfries and Carlisle.

This system would consist of the following parts:

1. New railway to be made,

	Miles.	Chains.
Glasgow, Dumfreis and Carlisle from Kilmarnock to Carlisle,	91	16
Line from Carlisle by Hawick to junction with the Edinburgh and Dalkeith railway, about	86	0
Glasgow Junction,	1	30
	178	46

2. Existing railways forming part of the system,

	Miles.
Portion of Glasgow and Ayr railway from Kilmarnock to Glasgow,	34
Edinburgh and Glasgow railway,	46
Edinburgh and Dalkeith,	8

It is quite clear that the traffic from Scotland to the south would not be sufficient at present to support two competing systems; and that if the one be sanctioned, the other, or so much of the other as directly competes with it, must be rejected. In this point of view, the Caledonian, and the Glasgow, Dumfreis and Carlisle lines, are absolutely inconsistent with each other; neither could the Caledonian, and a trunk line from Edinburgh to Carlisle, by way of Hawick, stand together, although a line for the mere purposes of local accommodation between Edinburgh and Hawick would not interfere with the traffic of the Caledonian line, and would not necessarily be inconsistent with it.

The Clydesdale line, although a material part of the Caledonian system, has a local traffic of its own, and would not necessarily be included in the rejection of that system. So also the Glasgow junction, although a part of the system opposed to the Caledonian, might, if a sufficient case of public advantage were otherwise established to overrule the objections of a private and local nature to which we have alluded, be sanctioned, notwitstanding the rejection of the system of which it formed a part.

Having thus explained the two competing systems, we proceed to investigate their comparative merits.

To be continued.

MONMOUTHSHIRE CANAL COMPANY AND THE NEWPORT AND PONTYPOOL RAILWAY.

Some time about the year 1792, a company obtained a charter by act of Parliament, to construct certain canals and roads through the mineral districts of Monmouthshire, all which roads were made to terminate in a focus at Newport, an excellent harbor on the river Usk. At the time referred to, Newport was but a small village, with a population of only a few hundred souls. The little iron made and coals gotten in the surrounding districts, was conveyed for shipment on mules' backs, and one or two small smacks, sailing weekly to Bristol, sufficed for the trade of the place. The mountains around abounded with game, and the wild grouse was rarely disturbed in its haunt, and scarce knew the fear of man. At that time a mania existed, and spread through England, for the construction of canals, fully equal to the present excitement for railways. The Monmouthshire canal was commenced, but, after a series of pecuniary and other difficulties, was almost suspended—constructed at a great expense for that time, opening a new district, and, when complete, almost without trade—the shares falling to a third of the first cost. A few bold spirits, however, still held the helm, and determined to weather the storm. Amongst these rank almost first one of the celebrated Wedgewood's family, founders of the modern Etruria. These firm men were not disappointed in their calculation; every year brought more capital into the country, and increased the trade of their lines, till at last the once despised canal shares have been held as a safe and desirable investment, at a premium of 120 per cent. on the first cost. The port of Newport now contains 15,000 inhabitants, splendid docks,—and her exports far exceed in tonnage that of Bristol, the once boasted queen of the west. The mountains in the northern district, the only part yet opened extensively, are one scene of bustle and activity; steam engines laboring with resistless force, and the whole horizon is one continued blaze with the volumes of flame emitted from the furnaces and forges covering the country.—*Mining Journal.*

Thus will it be in less than half a century hence, in our own mountainous regions; through the entire length of the "back-bone of the Union," "steam engines will labor with resistless force, and the whole horizon will be in one continued blaze with the volumes of flame emitted from the furnaces and forges" covering those regions! and this, too, mainly in consequence of the introduction of canals and railroads, as a medium of transportation and travel.

The mining Journal says—

"We think we may state with certainty, that the government is actively engaged in completing arrangements that will materially concern Ireland, more especially in the introduction of railways there. Foreseeing the danger which must inevitably follow an indiscriminate adoption of such projects, and the ruinous consequences which reckless speculation, or a re-action, would entail, it intends to form a commission, which shall, by its strict investigation and require-

ments, at once prevent the possibility of equivocal designs, and limit their furtherance to such undertakings as will prove indisputably beneficial to the country. It will derogate the right, not only of passively recommending, but actively promoting, such enterprises as it deems advisable, while it will discountenance, with equal pertinacity, any schemes whose objects are problematical.—At present, we are not prepared to speak more in detail, as it would be obviously premature to publish statements which might only serve to impede the government in its measures."

VALE'S GLOBE AND TRANSPARENT CELESTIAL SPHERE.

We have seen this very ingenious and useful instrument, and had it explained by the inventor, and particular problems resolved, questions answered and points illustrated with a simplicity and clearness that satisfied us that this instrument must be a valuable acquisition to the teacher, it has another recommendation, at least to us, as it goes on the *railroad* plan. A gentleman with us observed that he had learned more in the short explanation given in half an hour, than he had before in months, and that he had had subjects clearly explained in a few minutes on which he had troubled himself during a voyage without success.

We shall not attempt to describe minutely this instrument, it should be seen by every teacher and amateur in person, and described by Mr. Vale himself, which he is always ready to do. The cut which we now present conveys but a poor idea, because the instrument itself possesses every motion *real* and apparent which is exhibited in nature, or the effects of which we see; it is a model of nature, and at every movement we *see* the thing to be explained, and comprehend it with a word; but as it has several motions, all made by hand, and though extremely simple, yet when used by a person unaccustomed to it, we can easily conceive that he might give it every movement but the *right*. We therefore again recommend that it be seen, and in the first instance, explained by the inventor.

It consists of two globes in combination, the terrestrial within, and the celestial in transparent sections without; in the figure accompanying this, we see only the terrestial sphere and globe within; but on this sphere (consisting of the principal circles and points in the heavens, as the equator, poles, etc.,) the transparent sections are hung at pleasure on the outer sphere.

The principal merit of the instrument consists in a moveable figure, representing a traveller, or ship, and his antipode (not shown in the cut) *specked* at the top and bottom of the globe; to the globe also is attached a broad surface representing a moveable horizon to the traveller, or ship, shown in the cut. The traveller moves to any part of the earth, his horizon follows him; he goes round the world, and at every step the entire phenomena of the heavens are seen, and in a moment, by a swivel motion, the antipode is seen, and all his phenomena. For the mere teaching of geography, the movement of this traveller to every great city, and the exhibition of the *antipode* at each station, gives a clear idea in *one* lesson of the figure of the earth, and of the prominent locations.

We merely say that this globe and sphere performs every problem in a *rational* manner, which can be performed on both globes. It is also convertible into a planetarium of much simplicity, and supplying the deficiencies of the older kind. It is also a universal sundial, and it will resolve the most dif ficult problems in astronomy and spherics by forming triangles on the sphere.

A friend present who had just returned from a voyage, and while at sea had learned the use of the quadrant, sextant, etc., required the *rationale* of the manner of getting the latidude at sea. In *two minutes* it was done, to the perfect satisfaction of those who stood round, the ship's place was shown on the earth, the sun's place in the heavens, and *how*, from its mere altitude at noon, the latitude of the ship was found, was exhibited; our friend could perform the operation at sea, but had sought in vain for its explanation on board the ship. Why the sun was sometimes too fast and at others too slow, was *shown*; and the precision of the equinoxes made so plain that a child would have understood it. From its simplicity it could and ought to be introduced into our public schools. Mr. Vale is well known in New York as a teacher of navigation, and may be found in May, and after, at 3 Franklin Square.

We are gratified to learn that there is to be a move made to establish Atlantic steamships from this port. New York is not only deficient in the improved mode of *inland* communication, but also in steam ships upon the Atlantic—being very far behind Boston in both these elements of prosperity. It is high time that more liberal views, and more energetic action be found among those who have the means of promoting those important works, which will secure to our city the full benefits of her unrivalled position and natural advantages.

THE AMERICAN ATLANTIC STEAM NAVIGATION COMPANY.—In the Senate, on the 6th inst., Mr. Bockee, chairman of the select committee of eight senators to whom was referred the bill for the renewal and extension of the American Atlantic Steam Navigation Company's charter, made a favorable report, and recommended the bill to a third reading. He stated that the objects of the company were of great national importance; that Congress, at its last session, passed an act brought forward and promoted by the company, authorizing the Post Master General to make contracts for carrying the American foreign mails in steamships, and that they had reserved to themselves the option of taking the steamships employed in carrying the foreign mails, for the service of the navy in case of war. He considered, therefore, that the charter was necessary to carry out the views of the general government. The bill passed with only two negatives, and with some unimportant amendment was returned to the assembly for their concurrence. The charter is for twenty-four years, and a capital of two millions in $100 shares. In the afternoon of the same day, the bill was referred by the House to the standing committee on trade and manufactures, to report complete. On Wednesday, the report was brought in, recommending the assembly to concur in the amendment of the Senate, which the House agreed to. The main question was then taken by yeas and nays, and the bill passed unanimously, save one vote.

CALEDONIAN RAILWAY.—We are credibly informed, that this railway company is about to bring before the public an important project connected with their line, which will embrace the greater portion of the breadth of Scotland, from Berwick to Air, and will intersect the Caledonian line at the point near Lanark, where the Edinburgh, Glasgow, and northern branches diverge. This important step is in compliance with the suggestions of the Board of Trade, and it is probable the prospectus will be published in our paper next week—*Mining Journal.*

FOR SALE, AT A SACRIFICE—A LOCOmotive Engine, 4 wheels and Tender. Cylinders 10 in. dia., Stroke 16 in., Cylinders inside of smoke box. Weight of engine, with wood and water, about 9 tons. This engine and tender are new, and of the best materials and workmanship. If required, would be altered to a 6 wheeled engine.
Also, 1 20-horse High Pressure Steam Engine.
2 8-horse " " "
1 Upright Hydraulic Press.
All of which will be sold low, on application to
T. W. & R. C. SMITH.
Founders and Machinists,
May 12tf Alexandria, D. C.

RAILROAD IRON AND FIXTURES. THE Subscribers are ready to execute orders for the above, or to contract therefor, at a fixed price, delivered in the United States.
DAVIS, BROOKS & CO.,
ja45 21 Broad st., N. York.

ENGLISH RAILROAD SHARE-LIST.

NAME OF RAILWAY.	Miles opened.	Total sums, in pounds, authorized to be raised by shares.	Total sums, in pounds, authorized to be raised by loan or mortgage.	Total sums, in pounds, expended at dates of latest balance sheets.	Cost of working, in pounds, for six months as stated in latest balance sheets.	Total earnings, in pounds, for six months as stated in latest balance sheets.	Dividend at last meeting. Per share. £	s.	d.	Per cent. per annum. £	s.	d.	Paid on share.	Value of share.
Arboath and Forfar	15	102,000	35,000	138,870	.....	.....	0	12	6	2	10	0	25	27
Birmingham and Gloucester	55	1,187,500	407,336	1,500,806	39,261	53,203	1	5	0	2	10	0	100	100
Brandling Junction	23	161,700	365,470	481,452	.....	.....	.....			4	10	0	50	54
Bristol and Gloucester	37½	400,000	211,000	.....	.....	.....	.....			nihil.			30	36
Chester and Birkenhead	14½	750,000	143,170	518,989	5,856	13,148	0	8	6	1	14	0	50	32
Dublin and Drogheda	31	450,000	150,000	500,869	.....	.....	.....			nihil.			55	72
Dublin and Kingston	6	200,000	152,200	359,000	.....	.....	6	0	0	6	0	0	100	166
Dundee and Arbroath	16½	100,000	49,445	153,416	2,989	6,993	1	5	0	5	0	0	25	29
Durham and Sunderland	18½	169,350	124,055	270,392	9,889	17,702	.....			nihil.			34	29
East County and North and East	86¼	4,443,200	1,341,155	3,931,905	47,385	118,726	1	6	6	.....			45	57
Edinburg and Glasgow	46	1,125,000	375,000	1,649,523	29,429	55,866	1	2	6	4	10	0	50	57
Glasgow, Paisley and Ayr	51	937,500	.....	1,066,951	12,446	36,736	1	2	6	4	10	0	50	60
Glasgow, Paisley and Greenock	22½	650,000	216,666	787,884	11,572	23,177	0	5	0	2	0	0	25	12
Grand Junction	104	2,478,712	.....	2,453,169	84,309	195,080	5	0	0	10	0	0	100	210
Great North of England	45	969,000	581,017	1,262,518	12,201	36,189	1	12	6	3	5	0	100	119
Great Western	221½	4,650,000	3,679,343	7,272,539	132,235	369,904	3	10	0	7	0	0	75	138
Hartlepool	15½	438,000	155,540	719,205	.....	.....	.....			8	0	0	100	...
Leicester and Swannington	16½	140,000	.....	140,000	2,207	6,317	1	5	0	5	0	0	50	...
Liverpool and Manchester	32	1,209,000	497,750	1,739,835	57,239	117,559	5	0	0	10	0	0	100	203
Llanelly	27	200,000	44,000	221,624	.....	.....	1	0	0	2	0	0	87	...
London and Birmingham	12½	6,874,976	1,928,845	6,393,468	92,823	405,768	.....			10	0	0	100	218
London and Blackwall	3¾	804,000	266,000	1,315,640	15,978	23,870	.....			.....			16	6
London and Brighton	56	1,793,800	998,350	2,630,451	29,372	84,880	0	12	0	2	8	0	50	47
London and Croyden	8½	550,000	229,000	761,885	7,583	10,545	0	5	0	2	10	0	14	17
London and Greenwich	3¾	759,383	233,300	1,040,930	15,193	28,933	.....			nihil.			13	10
London and South Western	92¼	2,222,100	630,100	2,596,291	68,457	150,469	1	12	6	6	10	0	41	73
Manchester and Birmingham	31	2,100,000	690,586	1,923,699	15,397	58,162	1	0	6	5	0	0	40	48
Manchester and Bolton	10	778,100	197,730	773,743	8,585	21,140	2	2	0	4	10	0	93	110
Manchester and Leeds and Hull	81	2,937,500	1,943,932	3,921,593	46,653	156,761	.....			7l. & 10l.			60	88
Midland railway	178½	5,158,900	1,719,630	6,279,056	76,983	281,898	.....			.....			100	96
Newcastle and Carlisle	61	878,240	188,563	1,135,069	26,499	73,947	4	0	0	4	0	0	100	105
Newcastle and Darlington	23	500,000	.....	405,728	.....	.....	.....			nihil.			21	49
Newcastle and North Shields	7	150,000	153,876	309,629	8,943	18,466	.....			2	0	0	50	37
North Union	39	739,201	308,306	1,015,447	9,071	37,794	2	10	0	6	16	8	100	104
Paris and Orleans	82	1,600,000	400,000	1,978,415	.....	.....	0	16	0	8	0	0	20	39
Paris and Rouen	84	1,440,000	.....	.....	31,247	91,171	.....			8	0	0	20	38
Preston and Wyre	19	830,000	179,852	355,161	4,191	7,066	.....			nihil.			50	18
Sheffield and Manchester	19	1,150,000	311,759	951,455	11,895	14,876	.....			nihil.			82	93
South Eastern	88	2,996,000	1,530,277	3,464,172	40,993	81,482	0	10	6	2	2	0	50	39
Taff Vale	30	465,000	154,785	590,006	8,509	18,414	1	0	0	6	5	0	100	55
Ulster	25	519,150	20,000	348,626	5,401	13,856	0	15	0	5	1	8	29	37
Yarmouth and Norwich	20½	187,500	62,500	230,250	.....	.....	.....			nihil.			16	25
York and N. Mid. and Leeds and Selby	28	1,062,500	167,500	676,644	27,132	55,752	2	10	0	10	0	0	50	100

NEW AND PROPOSED RAILWAYS.	Share Capital.
Aberdeen	1,600,000
Barnsley Junction	200,000
Belfast and Ballymena	385,000
Blackburn and Accrington	400,000
Birk. and Ches. Junction	1,000,000
Bolt., Wigan and Liverpool	800,000
Caledonian	1,800,000
Cambridge and Lincoln	1,250,000
Chatham and Portsmouth	5,000,000
Chester and Wrexham	120,000
Churnet valley	1,800,000
Direct Northern to York	4,000,000
Dublin and Belfast	950,000
Dundee and Perth	250,000
Edinburg and Northern	800,000
Ely and Bedford	270,000
Glosgow, Dum. & Carlisle	1,300,000
Gt. South and West Ext	1,200,000
Gt. Grimsby and Sheffield	600,000
Harwich and E. coun. Jun.	160,000
Huddersfield & M. rl. & cl.	660,000
Kendal and Windermere	125,000
Leeds and Dewsbury	400,000
Leeds and Thirsk	800,000
Liv. Ormskirk and Preston	600,000
London and Portsmouth	1,750,000
London and York	5,000,000
Londonderry & Enniskillen	500,000
Lynn and Ely	200,000
Manchester, Bury and Ross	300,000
Manchester and Buxton	250,000
Mullingar and Athlone	.....
Newcastle and Berwick	700,000
Richmond & W. End Junc.	.....
Scottish Central	700,000
Sheffield and Lincolnshire.	650,000
Shrewsbury and Gd. Junc.	400,000
Shrew. Wolv. Dudly & B.	900,000
Trent Valley	900,000
West London Extension	64,000
West Yorkshire	1,000,000
Whitehaven and Maryport	100,000
FRENCH RAILWAYS.	
Boulogne and Amiens	1,500,000
Central of France	1,280,000
Lyons and Avignon	2,400,000
Orleans, Tours & Bordeaux	2,000,000
Paris and Lyons	2,500,000
Paris and Orleans	1,600,000
Paris and Rouen	1,400,000

Steam and Miscellaneous.

NAME OF COMPANY.	Num. of shares.	Am't. of share.	Amount paid.	Div. p.c. per ann.	Last price.	Present price.
Anglo Mexican Mint	10,000	10	10	.....	15⅞	15⅞
Anti Dry Rot	10,000	.....	18½	.....	2	.....
Australian Trust Company	5,700	100	35	.....	34½	.....
General hteam Navigation	20,000	15	14	10	27½	27
Gt Western Steam Pa	.....	.....	100	.....	25	.....
Metropolitan Wood Pav	15,000	10	6	5	6⅜	.....
Patent Elastic Pav	10,000	1	1	5	1¾	.....
Peninsular and Oriental	11,493	50	50	7	64¾	65
Ditto	3,200	50	40	7	.....	.....
Polytechnic Institution	.....	.....	.....	6	.....	.....
Reversionary Int. Soc	5,3 ⅌	100	100	4½	104	104
R. Mail Steam Packet	15,000	100	60	.....	36½	37
South Western Steam	4,000	25	5	.....	.....	.....
Ship Owners' Towing	3,000	10	7½	10	15	.....
Thames Tunnel	4,000	50	50	.....	.....	.....
University College	1,500	100	100	.....	.....	.....
Canals.						
Ashby de la Zouch	1,432	113	av.	4	70	70
Barnsley	720	100	100	14	180	180
Birmingham, 1-16 share	3,000	118¾	79	10	150	160
Do. and LiverpoolJunction	4,000	160	100	.....	13⅛	13⅛
Coventry	500	100	100	20	365	365
Cromford	460	do.	do.	24	250	250
Derby	600	do.	do.	9	105	105
Erewash	231	do.	do.	32	440	440
Forth and Clyde	1,297	400⅛	40⅛	4	440	440
Grand Junction	11,600	100	100	7	162	161½
Grand Surrey	1,500	do.	do.	.....	20	.....
Gloucester and Rerkley	5,000	do.	do.	.....	8	8
Grantham	749	150	150	8	185	185
Lancaster	11,699	47½	47½	3	40	40
Leeds and Liverpool	2,897	100	100	34	640	640
Leicester	545	140	140	9	139	139

NAME OF COMPANY.	Num. of shares.	Am't. of share	Amount paid.	Div. p.c. per ann.	Last price.	Present price.
Loughborough	70	142¾	142¾	70	1140	
Monmouthseire	2,409	100	100	10	160	160
Melton Mowbray	250	100	100	10	117	117
Mersey and Irwell	500	100	100	10		
Macclesfield	3,000	100	100	2½	15	15
Neath	247	100	100	17	365	365
Oxford	1,786	100	100	30	505	
Regents or Loncon	21,418	33¾	33¾	2½	25	25
Shropshire	500	125	125	6	120	120
Somerset coal	800	150	150	7½	123	123
Stafford and Worcester	700	140	140	25	480	480
Shrewsbury	500	125	125	12	230	230
Stourbridge	300	145	145	14	360	360
Stroudwater	200	150	150	19		
Swansea	533	100	100	15	240	240
Severn & Why & Rail Av.	3,762	26½	26½	5½	30	30
Trent and Mersey	2,600	50	50	65	495	
Thames and Medway	8,149	19¼	19¼	.....	10	10
Warwick and Birmingham	,000	100	100	10½	167	
Warwick and Napton	980	100	100	8½	122	
Water Works.						
Birmingham	4,800	25	25	3½	28	28
East London	4,433	100	100	8	223	225
Grand Junction	5,500	av.	41 2-3	7½	88	90
New River L. B. Ann	1,500			2½		
Manchester and Salford	6,486	av.	30	8⅜	57	57
Vauxhall, lt. S. London	1,000		100	5	55	55
West Middlesex	8,294	av.	63¾	6¾	126	127
Docks.						
Commercial Dock	1,065	100	100	3	80	
East and West India		sto.		5½	137	
London	3,238,310	sto.		4½	114¾	115
St. Katharine	1,352,752	sto.		5	116	171
Southampton	7,000	50	50			

AMERICAN STATE WORKS AND CANALS, ETC.

		STATE WORKS.	Length in miles.	Cost.	1843. Income.	1843. Expend.	1844. Income.	1844. Expend.
N. Y.	1	Black river canal	35	1,524,957	.....	.....	.....	.....
"	2	Cayuga and Seneca	21	237,000	16,557	10,953	24,618	14,443
"	3	Champlain canal	64	1,251,664	102,308	.....	116,739	.....
"	4	Chemung	23	684,600	8,140	14,486	14,385	12,740
"	5	Chenango	97	2,420,000	16,195	15,967	22,179	15,960
"	6	Crooked lake	8	156,777	461	3,674	1,498	3,951
"	7	Erie—enlargement of	363	12,648,852	1,880,316	.....	.....	.....
"	8	Genessee valley	120	3,739,000	.....	.....	.....	.....
"	9	52 miles opened, cost $1,500,000	.....	.....	12,292	13,819	19,641	15,557
"	10	Oneida lake	6	50,000	225	2,239	621	1,636
"	11	Oswego	38	565,437	29,147	22,742	56,165	28,599
Pa	12	Beaver division canal	25	.....	.....	.....	7,381	5,386
"	13	Delaware canal	60	.....	.....	.....	109,278	22,870
"	14	French creek	45	.....	.....	.....	.....	.....
"	15	Seneca river towing path	.....	69,276	.....	.....	381	.....
"	16	Columbia railroad	82	.....	.....	.....	413,336	205,057
"	17	Eastern division	36	.....	.....	.....	179,781	138,915
"	18	Juniata canal	93					
"	19	Portage railroad	130	.....	.....	.....	351,102	248,943
"	20	Western division canal	105					
"	21	North branch Susquehannah canal	73					
"	22	West " " " "	72	.....	.....	.....	101,949	57,633
Ohio	23	Hocking canal	56	975,130	4,757	.....	5,286	4,139
"	24	Miami canal	85	1,660,742	68,640	38,826	77,844	22,341
"	25	Miami extension	105	2,856,636	8,291	.....	12,723	14,741
"	26	Miami northern division	35	322,000	.....	.....	unfin'd.	.....
"	27	Muskingum	91	1,627,318	23,167	.....	29,385	15,027
"	28	Ohio	334	4,600,000	322,754	123,398	343,711	113,210
"	29	Wabash	91	3,028,340	35,922	6,400	48,589	12,817
"	30	Walhonding	25	607,269	838	39,005	1,977	1,238
"	31	Western road	31	255,015	7,254	1,782	8,747	2,929
Ind.	32	Sundry works	.....	11,000,000	.....	.....	.....	.....
"	33	Maume canal	.....	.....	.....	.....	.....	.....
Ill.	34	Sundry works	.....	10,000,000	.....	.....	.....	.....
Mich	35	Central railroad	110	1,842,308	149,987	75,960	211,170	89,420
"	36	Southern railroad	68	936,295	24,064	7,907	60,341	70,000

The State Canals are all 4 feet deep, and the locks are 13 to 17 feet wide, and 80 to 90 feet in length.

The six millions paid to the canal fund from auction and salt duties are not included in the estimate of cost. The Genesee valley and the Black river canals require large sums for their completion, the interest of which *additional* sum is much greater than the estimated gross income of these canals when finished. The sums required to complete these two canals are $2,000,000 and $600,000, making their total cost when finished $5,553,000 and $2,409,000; an expenditure incurred on estimated incomes (admitted to be liberal,) of $39,000 and $14,000 respectively.

The total receipts from the works of Pennsylvania for 1843 were $1,019,401; for 1844 $1,164,326, and the cost about 30 millions.

The receipts for 1844 were as follows:

Canal tolls,	578,404
Railroad tolls,	252,855
Motive power,	319,590
Trucks,	13,477

of which $585,922 is from 118 miles of railroad, and $578,404 from 550 miles of canal.

The canals of Ohio are supported by a property tax of 5½ mills on the dollar. There are 853 miles of canal in the State, which yielded in 1843 $471,623, and in 1844 $515,393, the cost, 1st Jan. '43 being $15,577,233. The increase of '44 over '43 is only $43,770, though the year '44 has exhibited a greater increase throughout the country than ever before known.

These 21 millions on sundry works yield no income whatever.

The central railroad yields above 6 per cent., and is the only State work—the Erie canal excepted—which is able to stand alone.

	CANALS.	Length in miles.	Cost.	1843. Income. Gross.	1843. Income. Nett.	Div. per cent.	1844. Income. Gross.	1844. Income. Nett.	Div. per cent.	Value of stock.	REMARKS.
	Blackstone	.....	.....	.....	.....	....	.....	.....	....	.....	
	Bald Eagle Navigation	25	400,000	.....	.....	....	.....	.....	....	.....	
	Beaver and Sandy, (part)	.....	1,000,000	.....	.....	....	.....	.....	....	.....	
	Charleston, (S. C.)	.....	.....	.....	.....	....	.....	.....	....	.....	
	Chesapeake and Ohio	184	12,370,470	47,637	.....	....	.....	.....	....	.....	
	Conestota	12	300,000	.....	.....	....	.....	.....	....	.....	
	Delaware and Chesapeake	13	.....	.....	.....	....	.....	.....	....	26	
	Schuylkill	108	3,500,000	279,795	102,221	....	190,693	120,624	....	31	
	Farmington	.....	.....	.....	.....	....	.....	.....	....	.....	
	James river and Kenhawa	.....	.....	.....	.....	....	.....	.....	....	.....	
	Middlesex	.....	.....	.....	.....	....	.....	.....	....	.....	
	Port Deposit	10	200,000	.....	.....	....	.....	.....	....	.....	
	Delaware and Raritan	43	2,900,000	99,623	53,327	....	131,491	84,455	....	.....	
	Southwark	.....	300,000	.....	.....	....	.....	.....	....	.....	
	Tide Water	45	2,900,000	.....	.....	....	.....	.....	....	.....	
	Union	80	2,000,000	.....	.....	....	.....	.....	....	.....	
	Morris	101	1,000,000	.....	.....	....	.....	.....	....	28	
	Dismal Swamp	.....	.....	.....	.....	....	.....	.....	....	.....	

We may, perhaps, at some future time be enabled to give the particulars of all these canals.

The Chesapeake and Ohio canal is not yet completed to the coal mines, hence its trifling income.

The enlargement of the Schuylkill canal has been commenced.

The Morris canal was lately sold for one million, about one-fourth of its cost. It is said in the papers that it is to be enlarged. We have seen no report, nor heard of the appointment of any engineer.

CANADIAN CANALS.	Length in miles.	No. of locks.	Lockage in feet.	Size of locks. Length of chamber.	Size of locks. Width.	Size of locks. Depth on mitre sill.	Width of canal. Bottom.	Width of canal. Surface.	Estimate.	Expended to Sept. 1843.	Income. 1843.	Income. 1844.
The Welland canal	.....	.....	.....	feet.	feet.	feet.	feet.	feet.	3,948,572	2,485,572	64,658	
Main trunk from Port Colborne to Port Dalhousie	28	31	328	150	26 1-2	8 1-2	45	81	.....	.....		
Junction branch to Dunville (not added)	21	1	6	150	26 1-2	8 1-2	35	71	.....	.....		
Broad creek branch to Port Maitland (below.)	1 1-2	1	6	200	45	9	45	85	.....	.....		
The St. Lawrence canal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
Galops and Port Cardinal	2	2	7	200	45	9	50	90	.....	.....		
Rapid Plat	4	2	11 1-2	200	45	9	50	90	672,498	973		
Farren's point	3-4	1	3 1-2	200	45	9	50	90	.....	.....		
Cornwall, passing the Long Sault rapids	11 1-2	7	48	200	55	9	100	150	865,372	1,665,663		
Beauharnois, do. Coteau, Cedars and Cascades road	11 1-4	9	82 1-2	200	45	9	80	120	1,190,087	275,426		
Lachine, do. Lachine rapids	8 1-2	5	44 1-2	200	45	9	80	120	old canal.	400,000	29,288	
Elargement of do.	.....	.....	.....	.....	.....	.....	.....	.....	1,001,333	64,439		
Total from lake Erie to the sea	12	57	525									
Chambly	66	9	74	120	24	6	36	60	200,000	440,000	1,409	

COAL COMPANIES.	Length in miles R. rd.	Length in miles Canals.	Cost.	1843. Income. Gross.	1843. Income. Nett.	Div. per cent.	1844. Income. Gross.	1844. Income. Nett.	Div. per cent.	Value of stock.	REMARKS.
Delaware and Hudson	16	108	2,800,000	930,203	196,702	10	.....	.....	....	130	
Lehigh	20	72	6,000,000	.....	.....	....	.....	.....	....	31	

AMERICAN RAILROADS.

		RAILROADS.	Length in miles.	Cost.	Loans and debts.	Number of shares.	Paid on share	1843. Income. Gross.	1843. Income. Nett.	Div. per cent.	1844. Income. Gross.	1844. Income. Nett.	Div. per cent.	Previous prices	SALES. Week ending April 2d. Shares.	SALES. Price
Me.	1	Portland, Saco and Portsmouth	50	1,200,000				89,997	47,166	7	124,497	74,841	6	113½	..	102
N. H.	2	Concord	35	750,000									12	70½	..	139½
Mass.	3	Boston and Maine	56	1,485,461				178,745	68,499	6	233,101	86,401	6½	110¾	..	112¼
"	4	Boston and Maine extension	17 1-4	455,703	unfin.											
"	5	Boston and Lowell	26	1,863,746				277,315	144,000	8	316,909	147,615	8	120½	..	120
"	6	Boston and Providence	41	1,886,135	none.	18,600	100	233,388	110,823	6	282,701	156,109	6	108¾	.....	109½
"	7	Boston and Worcester	44	2,914,078				4 0,141	162,000	6	428,437	195,163	7½	116½	..	117½
"	8	Berkshire	21	250,000	not stated				17,500	7	17,737					
"	9	Charlestown branch		280,260						13	34,654	13,971	5½	70½	..	82½
"	10	Eastern	54	2,388,631				279,563	140,595	6	337,238	227,920	8	109¾	..	109
"	11	Fitchburg	50	1,150,000	just opn'd						42,759	26,835		120	..	124
"	12	Nashua and Lowell	14 1-2	380,000				84,079		8	94,588	34,944	10	121	.....	126½
"	13	New Bedford and Taunton	20	430,962				50,671	24,000	6	64,998	24,000	6			
"	14	Northampton and Springfield		172,883	unfin.											
"	15	Norwich and Worcester	59	2,170,366	900,000	16,535	100	162,336	24,871		230,674	99,464	3	70½	.....	72
"	16	Old Colony		87,820	unfin.									102	..	104
"	17	Stoughton branch	4	63,075	unfin.											
"	18	Taunton branch	11	250,000					20,000	8	96,687	20,000	8	118		
"	19	Vermont and Massachusetts														
"	20	West Stockbridge	3	41,516	200		100						4			
"	21	Western, (117 miles in Mass.,)	156	7,686,202	4,686,202	30,000		573,882	284,432		753,753	439,679	3	102½	.....	101½
"	22	Worcester branch to Milbury		8,431	506											
"	23	Housatonic, (10 months,)	74	1,244,123							150,000			82		
Con	24	Hartford and New Haven	38	1,100,000	100,000	10,000	100						6	89	.....	94½
"	25	Hartford and Springfield	25 1-2	600,000	400,000	2,000	100									
"	26	Stonington, (year ending 1st Sept.,)	48	2,600,000	650,000	13,000	100	113,889			154,724	79,845		41	.....	39½
N.Y.	27	Attica and Buffalo	31	336,211				45,896	7,522		73,248	48,033	0			
"	28	Auburn and Rochester	78	1,796,342	200,000	14,000	100	189,693	112,000		237,667	152,007	6	106	..	
"	29	Auburn and Syracuse	26	766,657			133½	86,291	27,334		96,738	52,544	6	116		
"	30	Buffalo and Niagara	22	200,000		1,500								100		
"	31	Erie, (446 miles,)		5,000,000										31½		29
"	32	Erie, opened	53						48,000		126,020	59,075				
"	33	Harlem	26	1,206,231							140,685	62,399		70	..	72
"	34	Hudson and Berkshire	31	575,613			50				35,029	1,999	0	14	..	..
"	35	Long Island	96	1,610,221	392,340	29,846					153,456	58,76	0	75½	.....	76
"	36	Mohawk and Hudson	17	1,317,893	400,000	10,000	100	69,948	58,780		79,804	45,763	0	64½	..	61
"	37	Saratoga and Schenectady	22	303,658				42,242	3,000	1	34,666	8,455	0			
"	38	Schenectady and Troy	20 1-2	640,800				28,043			32,646	6,365	0			
"	39	Syracuse and Utica	53	1,115,897	none.	16,000	62½	163,701	72,000		192,061	120,992	8	115	..	..
"	40	Tonnawanda	43	727,332				76,227			114,177	75,865	5			
"	41	Troy and Greenbush	6	180,000												
"	42	Troy and Saratoga	25	475,801				44,325	21,000		38,502	9,971	2½			
"	43	Utica and Schenectady	78	2,168,165	none.	20,000	100	277,164	180,000	9	331,932	199'094	8	129	..	
N. J.	44	Camden and Amboy	61	3,200,000				682,832	383,880		784,191	404,956		110¾	..	111
"	45	Elizabethtown and Somerville	26													
"	46	New Jersey	34	500,000										93½	..	..
"	47	Paterson	16	2,000,000									6	85		
Pa.	48	Beaver Meadow	26	500,000												
"	49	Cumberland Valley	46	1,000,000												
"	50	Harrisburg and Lancaster	* 36	1,250,000										30		
"	51	Hazleton branch	* 10	860,000												
"	52	Little Schuylkill	29	120,000												
"	53	Blossburg and Corning	40	900,000												
"	54	Mauch Chunk	* 9	600,000												
"	55	Minehill and Schuylkill Haven	* 18	100,000						12				143½		
"	56	Norristown	20	315,000										6½	..	7
"	57	Philadelphia and Trenton	* 30	800,000										104		
"	58	Pottsville and Danville	29 1-2	400,000												
"	59	Reading	94	1,500,000	7,447,570	40,200	50				597,613	343,511		50½	.....	49
"	60	Schuylkill valley	* 10	9,457,570												
"	61	Williamsport and Elmira	25	1,000,000				20,000								
"	62	Philadelphia and Baltimore	93	400,000				43,043	200,000			210,000		43½	..	42
Del.	63	Frenchtown	16	4,400,000												
Md.	64	Baltimore and Ohio, (1st Oct.)	188	600,000				575,235	279,402		358,620	346,946		48½	..	50½
"	65	Baltimore and Susquehanna	58	7,623,600										5	..	6
"	66	Baltimore and Washington	38	3,000,000				177,227	71,691		212,129	104,529		84		
Va.	67	Greensville and Roanoke	* 17	12 1,800,000												
"	68	Petersburg and Roanoke	* 60	260,000							122,871	72,898	3			
"	69	Portsmouth and Roanoke	78 1-2	969,880												
"	70	Richmond and Fredericksburg	* 61 1-2	850,000												
"	71	Richmond and Petersburg	* 22 1-2	1,200,000												
"	72	Winchester and Potomac	* 32	700,000												
N. C.	73	Raleigh and Gaston	* 84 1-2	500,000												
"	74	Wilmington and Raleigh	* 161	1,360,000												
S. C.	75	South Carolina	136	1,800,000		34,410	75				532,871	140,196	5			
"	76	Columbia	66	5,671,452				201,464	77,456		328,425	180,704				
Ga.	77	Central	190					227,532	93,190							
"	78	Georgia	147 1-2	2,581,723				248,026	158,207		248,096	147,523				
"	79	Montgomery and West Point	89	2,650,000	170,000		100				35,000	15,000				
Ky.	80	Lexington and Ohio	40	500,000												
Ohio	81	Little Miami	40	450,000												
"	82	Mad river	40	400,000												
Ind.	83	Madison and Indianapolis	56	152,000												
Can.	84	Champlain and St. Lawrence	15	212,000					12,000		58,000	24,000		110		

Correspondents will oblige us by sending in their communications by Monday morning at latest.

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AMERICAN RAILROAD JOURNAL.

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Thursday, May 15, 1845.

☞ Errors will sometimes occur in well regulated establishments, and they may sometimes therefore be expected in ours—and will, we hope, be overlooked, when the past cannot be remedied. It is exceedingly vexatious, though, to be made ridiculous, either by mischievous types, or roguish *boys*—as we were in the two last numbers of the Journal. By some means, either accidental or designedly, the figures $250,000, standing in the column of the "cost," in the table of "American Railroads," opposite "No. 8—Berkshire railroad," are out, and all the figures in that column are elevated *one line* above their proper place: by which operation the Charlestown branch railroad is represented as having cost $2,388,631!, and the Norwich and Worcester road was built for the trifling sum of $87,000!!, and the West Stockbridge road is made to cost only $7,585,202!!!, while that noble work, the "Western railroad," of 156 miles in length, over mountains and broad rivers, appears to have cost *only* $8,431!!!!, and so of all the rest down to "No. 46—Morris and Essex," which, having nothing else to do, has gone in search of the *cost* of the "Berkshire"—thus equalizing the *number of lines* in the page, though thirty-six of them are misplaced by the mysterious absence of these two chaps.

We shall not, we trust, be prosecuted for the thirty-six libels, *twice* told, of which we plead guilty in the premises, as we have detected, *corrected* and *acknowledged* the wrong before it was pointed out to us even by the injured parties. But let us once catch the rascal who committed the deed—and——

RAILROAD ACCIDENTS.

It is painful to record the numerous accidents on railroads—and it is equally painful to think that many of them result from *carelessness*, either of those who have charge of the roads or trains, or—which is quite as frequent—of those who suffer. There is, however, another source prolific of serious accidents. We have often observed that, in the construction of bridges and depots, there is not space enough between the posts for the passage of cars of the width of those in common use; and in many cases where there is a double track, they are too near together; so near, indeed, that a man would be crushed if he happened to be caught between two passing trains, or a loaded car, on the other track—as recently occurred on the Philadelphia and Reading railroad. Now one thing is certain, and should therefore be, as far as possible, guarded against. We all know that men will be thoughtless sometimes, and intently and necessarily engaged at others, so as to be wholly unconscious of approaching danger; therefore, in the construction of railroad bridges, and the *entrance* to depots, there should always be space allowed for a person to stand, or pass; *or* the cars should be made *narrower*, and thus allow sufficient space. In the construction of new, or rebuilding of old structures, this subject should be well considered.

☞ We are indebted, though we sometimes omit to give credit, to that excellent paper, the Pottsville "Miners' Journal," for our reports of the Pennsylvania coal trade.

"The demand for coal is very brisk at present, particularly for large white ash, and the price has advanced. A large portion of the Schuylkill valley, and the whole of the Mill Creek region, remains cut off from the market, in consequence of the roads being taken up to widen the tracks between the Reading railroad and the connection. The Mill Creek road will be ready in about three weeks. The Little Schuylkill railroad, at Port Clinton, has been completed, and the first train of cars departed from that place on Thursday last.

"Vessles are very scarce at Philadelphia, to carry coal to eastern ports, and freights have advanced."

Freights from Pottsville to Philadelphia, 70 cents, to New York, $1 80.

The Coal Trade.—Sent by railroad from Pottsville and Port Carbon, for the week ending on Thursday evening last.....4,586·05
Per last report.....50,281·06

Total.....54,867·11
From Schuylkill Haven.....5,979·05
Per last report.....92,358·05

Total.....98,337·10
From Port Clinton.....130·18
Total.....153,335·19

BY CANAL.

From Pottsville and Port Carbon.....3,275·15
Per last report.....24,815·02

Total.....86,120·17
From Schuylkill Haven—total up to Thursday evening.....
Per last report.....775·01

Total.....3,115·06
From Port Clinton.....1,107·05
Per last report.....6,631·09

7,738·14

Total by canal.....38,974·17
Total by railroad.....153,335·19

Total by railroad and canal.....192,310·16

Mount Carbon Railroad.—The amount of coal transported over this road for the week ending on Thursday evening last, is - - - 6,280
Per last report, - - - - - 51,824

Total, - - - - - - 58,104

Lehigh Coal Trade.—Despatched this season up to 5th mo. 3d, 1845, from Mauch Chunk.

Lehigh coal and navigation co.		
Summit, - - - -	4995	
Room Run, - - - -	1854	—6849
Beaver Meadow railroad and coal co.,		2463
From Penn Haven.—Hazleton coal co.,		2270
From Rock Port.—Buck Mountain coal co.,		642
		12224

Total shipments from Mauch Chunk.

Lehigh coal and navigation co.		
Summit mines, - -	18215	
Room run do., - - -	4990	—23195
Beaver Meadow railroad and coal co.,		8205
From Penn Haven—Hazleton coal co.,		7204
From Rock Port—Buck Mountain coal co.,		2050
		40,655

Pine Grove Coal Trade.—Transportation on Union canal railroad from 16 to 30th April (inclusive.)

	Tons	cwt.	qr.			
	2879	8	0			
Per last report, -	3667	1	2	6,546	9	2
Amount transported on Swatara railroad, during						
March, 1845 - -	548	16	0			
April, - -	2410	00	2	2959	6	2

Wyoming Coal Trade—Total to May 3d, 5758

Minehill and Schuylkill Haven Railroad.—The following is the amount of coal transported over this road, for the week ending on Wednesday evening last: 6,500·04
Per last report, - - 94,953·03
Total, - - - 101,453·07

Miami Canal.—The water, says the Cincinnati Gazette, is to be let out on the 20th inst., to make general repairs, and will remain out two or three weeks.

Tide Water Canal.—The Baltimore American says: "We are gratified to find from the following letter from our correspondent at Havre de Grace, that the trade on this important work is rapidly and steadily increasing. When further progress is made in the completion of works having for their object the ready and cheap transportation of anthracite coal to the Pennsylvania canals, and thence to the Chesapeake bay, by means of the Tide Water canal, there is no doubt that Baltimore will participate largely in the lucrative and prosperous trade that will be opened."

Havre de Grace,, May 1, 1845.

Gentlemen: Since the opening of the canal, this season, the number of arrivals of boats has been 600 of which 285 have been towed to Philadelphia, and 205 to Baltimore, making 80 boats in favor of Philadelphia. There have cleared from this place northwardly, up to this date, 528 boats; to the same date last year, 392 boats, which is an increase in favor of this year, thus far, of 136 boats.

RAILROADS AND CANALS IN OHIO.

We learn from the Cincinnati Gazette, that Mr. Mills, who negotiated the loan in Boston for completing the railroad from Sandusky to Cincinnati, had reached the latter city; and that energetic measures will be adopted for its early completion in a substantial manner. The editor of the Gazette wisely urges that the structure be of the most permanent kind rather than that it be completed in the shortest possible period. In this we cordially agree with him, and hope to see that his opinion of the managers of the work is correct, when he says, of the directors,

"They will look to one thing, as, after all, *the* important matter—*durability*. For they, or any company, will save time and money, if not life, in such an undertaking, who make this the test; and this the sensible directors of the Miami and Mad River road understand perfectly well. We may assure our readers, then, of this—that the work will be finished just as soon as it can be safely done."

☞ The directors of the Concord railroad have declared a dividend for the last six months of six per cent. This makes a dividend of thirteen per cent. for the last year, with a respectable surplus on hand.

☞ We always record, with pleasure and pride, the extraordinary performances of American machinery, and especially of American locomotive engines. The following statement is taken from the Pottsville "Miners' Journal," of 10th inst. This engine hauled what would load the largest ship which sails out of the port of New York.

"The greatest draught ever made over any railroad in the world, was made on Tuesday, by Wm. Norris & Co.'s new engine, the Atlantic, over the Pottsville and Philadelphia road. The Atlantic started from Schuylkill Haven on Tuesday, with 150 iron cars, weighing 390 tons, and containing 744 tons, one hundred weight of coal, total weight, exclusive of weight of engine, 1,134 tons, one hundred weight. This enormous train and weight she started without aid, and during the whole draw from Schuylkill Haven to Philadelphia, she never once slipped a wheel, or required assistance from other engines, but performed her work alone and beautifully, and in a shorter time than has been made before over the road by any engine with a coal train. She broke but two couplings in the whole draw between Schuylkill Haven and Philadelphia.

THE ERIE CANAL ENLARGEMENT.

When the Erie canal was constructed, it was calculated that boats of thirty tons would be best adapted to its navigation; such a boat it was expected would be drawn by one horse. The size of the boat was to be seven feet wide, draw three feet of water, and be seventy-five feet long. In view of this kind of boat, the locks were made ninety feet long and fifteen feet in width in the chamber, designed to pass two boats at a time. A model boat on this plan was built and put in operation on the first opening of the middle section of the canal. The model was taken from English canal boats. It was doubtless considered that experience in England had led to this, as best adapted to canal navigation. The model, however, was never copied on the Erie canal. There would probably have been some experimenting on the model plan, had not the first navigation of the canal been made with the Durham boats, that had been in use on the Mohawk river. As soon as the canal was opened, these river boats, being ready, entered the canal, and engaged more or less in its navigation. The boats then built for the canal, followed more the form of the river boats than the model canal boat.

The consequence has been, that no boats have been used in the navigation of this canal that would admit of two passing a lock at the same time. At the time the Erie canal was commenced, there were intelligent men, who advanced the opinion, that it would not be capable of accommodating the freight that would ultimately seek this channel for market. When the subject of dimensions was discussed by the canal commissioners and engineers, they decided on the original size, as being under, all the circumstances, best calculated to meet the interests of the enterprise. The novelty, at that time, of such undertakings, the great magnitude of the work, and the incredulity of a large portion of the citizens as to its success and usefulness, no doubt, produced a cautious action on the part of the commissioners in settling this question. The friends of the enterprise were generally satisfied with their decision. Accustomed to view the power of a horse as sufficient to draw but half or three quarters of a ton, an improvement that would increase his capacity to 30 tons, seemed to reach all the economy that could be expected.

The dimensions of this canal were 28 feet in width at bottom, 40 feet at top water, and 4 feet deep.

The necessity of economizing the expenditures, and the want of experience, led to many errors in the original construction of this work. Among these may be mentioned that of laying the canal, to a great extent, on a low level as compared with the adjacent country and the streams that passed it. By this means, numerous small streams, and some large ones, emptied their waters directly into the canal, and deposited more or less of sand, mud, and gravel on its bottom. This deposite had to be removed mostly in the spring of the year, before navigation was opened; and, being necessarily a difficult and expensive operation, was rarely done so as to give the navigation the benefit of a full depth of water. The location of locks, particularly at Cohoes, and the narrow and crooked channel of the canal, at Little Falls and other places, contribute much to impair the navigation. Under these circumstances, the rapidly increasing trade had so filled the canal, in 1833, that measures to improve the navigation were required to meet its wants.

In May, 1834, the legislature authorized the canal commissioners to double the locks between Albany and Syracuse. The commissioners, during that season, had surveys and examinations made to carry out this measure. This gave rise to a discussion of the question, whether the second set of locks should not be adapted to a canal of larger dimensions, with such improvements in its general character as were practicable?—At this time, no attention of consequence appeared to have been given to other considerations, than what was sufficient to afford the necessary capacity to the trade—economy in the traction of boats was not generally regarded. At that time, I was engaged as the engineer of the Chenango canal. The late governor, Wm. C. Bouck, was, at that time, a canal commissioner, and had charge of that canal. With Mr. Bouck I had frequent conversations in relation to the improvements contemplated on the Erie canal. Having an intimate knowledge of the greatest portion of the Erie canal, and knowing the necessity of many improvements, it appeared to me important that nothing should be done until the whole subject was well considered. The trade had increased beyond the highest expectation of its friends, and had every prospect of going on increasing for a long time to come. It appeared to me that three considerations were important to be kept in view.—first, to provide a capacity that would meet the ultimate wants of the trade; second, to provide the most economical transportation; and, third, to provide for a class of boats that could be towed safely and economically on the Hudson, thereby saving the expense, delay, and loss consequent on transhipment.

Mr. Bouck took a deep interest in this enterprise, and requested me to investigate the question relating to economy of transportation. In January, 1835, I addressed a letter to him, giving the result of my investigations. This letter he submitted to the canal committee of the assembly, who appended it to their report of that session. In that letter, I endeavored to show that, on a canal of 70 feet width at surface, and 7 feet deep, with locks 16 feet wide, and 110 feet long in the chamber, the power of traction required would be about 53 per cent. per ton—and that the total cost of transportation would be 50 per cent., or one half—of that required on the Erie canal at that time.

This investigation many persons were disposed to question, both at that time and subsequently—denying that it would be realized in practice. I have never known, however, that any one has entered into any investigations to prove its fallacy; nor have I ever doubted that this economy in transportation, on the completion of the enlargement on this scale, as finally settled upon by the Canal Board, would be fully realized. So long, however, as the work remains unfinished, the question in relation to this canal cannot be practically settled.

But the value of this kind of improvement has not escaped the vigilant eye of private enterprise. Incorporated companies have turned their attention to it for the purpose of increasing the capacity, and economising the expense of transportation. The Delaware and Hudson Canal Company have carried an improvement of this kind to such an extent as to afford very interesting results. I will introduce their experiment with a few general remarks on the Delaware and Hudson canal.

This canal commences at tide water, at Roundout, near the west bank of the Hudson river, runs through Ulster, Sullivan, and part of Orange county, in this state, to the Delaware river, near Carpenter's Point, a distance of 60 miles, thence up the Delaware about 22 miles, to the mouth of the Lackawaxen river; crossing the Delaware, t follows the valley of the Lackawaxen, in Pennsylvania, about 25 miles, to the village of Honesdale. The total length is about 108 miles, and has —— feet lockage in 110 locks. At Honesdale, the canal meets the Carbondale railroad, by which the coal of the Lackawana valley is there brought to it. The main object of the canal was the coal trade. The canal was commenced in 1825; in the fall of 1829 it was opened for navigation; about 8,000 tons of coal were brought to market through it that year. That portion of the route lying in the valleys of the Lackawaxen, Delaware, and lower Roundout rivers, was of a very difficult and expensive character for a canal. Those valleys are narrow, and bounded by steep and high hills—to a large extent, rock rising from the water's edge to several hundred feet in height. The enterprise, at the time the work was begun, required the most energetic and persevering efforts to surmount the natural obstables it had to meet, and to sustain the means necessary, in the face of a strong public sentiment, which had arrayed itself against it.

It is but simple justice to the managers of this work to say, they evinced, under great discouragements, an eminent degree of devotion, ability and perseverence, in completing a work that has conferred great benefits on the city of New York. Although other avenues to the coal fields of Pennsylvania have since been extensively opened, and the price of coal greatly reduced, it will be obvious, on the least reflection, that this avenue, connecting with the tide water of the Hudson, affords a highly important competitor to more distant channels, and must do much in regulating the price of that article. The canal was made

generally 20 feet wide on the bottom, 32 feet on the surface, (in some parts 36 feet,) and 4 feet depth of water. The locks are 76 feet long between the gates, and 9 feet wide. It was designed for boats of 30 tons. At the time it was projected, it was not supposed its annual business would exceed 150,000 tons. In consequence of the increasing demand for coal, and the importance of improving the means and the economy of transit, the company turned their attention, in 1842, to the subject of enlarging their canal. The plan submitted by R. F. Lord, Esq., their engineer, was to raise the water one foot, making the canal 5 feet deep instead of 4 feet. By this proceeding, its top width would be increased from 32 feet to 35 or 36 feet, according to the slope of the banks. The cross section of the water-way of the original canal was 104 square feet; and as enlarged, 137½ to 140 square feet according to the slope. Taking 139 as the average, the enlarged section is about 36 per cent. greater than the original section. This plan of enlargement was commenced in the latter part of the season of 1842 In the spring of 1843, the work had progressed so far, that they began to give the canal increased depth of water. This course was proceeded in by a gradual process, continuing through the season, but not reaching the full plan of improvement during that year. From this partial condition of the alteration, the boats increased their average tonnage from 31 to 35 tons, in the year 1843. The quantity of coal brought down the canal that season, (1843,) was 227,605 tons. At the opening of navigation, in 1844, owing to the unsettled condition of the new work, and the effect of frost on recently raised banks, the water was not put on the full height to which it had been carried the fall previous. As the season advanced, the water was gradually raised; and, in autumn, of that year, was brought to the full depth of five feet. There were three classes of boats used for navigating the canal that season, (1844):—First, the old boats, without alteration; second, the old boats, raised, so as to give them increased draft of water; and third, new boats, built for the enlargement.

The average tonnage of the 1st class (for 1844) has been	$36\frac{7}{10}$ tons.
Do. of the 2d class,	$39\frac{2}{10}$
Do. of tne 3d class,	$42\frac{13}{20}$
The average for all the boats has been	$40\frac{9}{10}$

The total quantity of coal bro't down the past season was 251,000 tons.

The following will show the influence of this improvement on the price of freight:—

The price per ton, in 1842, before the improvement was brought into use, was	$1 34
The price, in 1844, the improvement fully in use only the latter part of the season,	0 97

This success has induced the company to decide on a further enlargement of their work. The new boats, of which 135 were in use during the autumn, when the full depth of water was enjoyed, carried 45 tons and upwards. The engineer has informed me that these boats, during the time the water was full height, were navigated by the same power that had always been employed on the old boats, previous to the enlargement, to carry an average of 31 tons,—that is, by one horse. They have a regulation on this canal, by which boats that perform their trips in nine days are paid a higher price per ton than when a longer time is taken. This rule has long been established, and the object is to maintain greater regularity in the delivery of coal. The boatmen, therefore, have an inducement to use all diligence in navigating their boats.

The new boats, with 45 tons, on the completed improvement, have made their trips quite as easily within the time as on the old navigation, with 31 tons; and hence it is estimated, the cost of transportation will be reduced from $1 34, in 1842, to 90 cts., in 1845. Further, the saving in the price of freight, in the years 1843 and 1844, has more than re-imbursed the expense of the enlargement.

This experiment, which appears to have been very carefully observed, shows that an enlargement of the section of the canal of 36 per cent., has increased the capacity of boats navigating it 45 per cent., and this without at all increasing the cost of traction, or the hands to manage the boats. Comparing the price of transportation, that on the enlarged canal, is 67 per cent. of the cost on the old canal. Here we see that a saving of one-third the expense of transportation has been effected on a canal, by enlarging its sectional area 36 per cent.

This canal, as enlarged, has not the sectional area required for the most favorable traction of a boat of 45 tons, and, consequently, more tractile power is required, than would be necessary if it was the most favorable section; but, notwithstanding the transportation derives great advantage from the measure of improvement, the boats for this canal, from their form and size, do not require the same relative section for 45 tons, as they do for 31 tons.

In the calculations of the expense of transportation before alluded to for the Erie canal, the relation of the sectional areas of the original form to that of the proposed 7 feet canal, are as 1 to 2.94; or, the enlarged canal is nearly 200 per cent. greater area than the original size. This measure of enlargement was to give the most favorable traction, or one-half the cost per ton on the old canal. It was regarded as important to an economical transportation, with large boats, in a crowded and promiscuous trade, that the section of canal should be liberal, not only to favor their traction, but to allow adequate freedom in their movement in passing each other, and more fully to feel their rudders. It is obvious, a boat navigating a comparatively shallow and narrow canal will not obey its rudder as readily, or be as easily managed, as on a broad and deep channel.

The experience on the Delaware and Hudson canal has shown that an enlargement of 36 per cent. has reduced the cost of transportation 33 per cent.; we are, therefore, led to the conclusion, that an enlargement of the Erie canal of 200 per cent, will reduce the cost of transportation, at least, 50 per cent. Boats for the large canal would be advantageously towed on the Hudson, saving all the delay, expenses of transhipment, and consequent breakage, and one set of agencies, which it is believed would save full 50 per cent. of Hudson river charges, and the delay incident to transhipment. The tolls on the canal are, probably, nearly equal (taking the general average) to the cost of transportation at this time; the saving, therefore, of 50 per cent. on the transportation would be equal to at least 25 per cent. of the total cost of toll and transportation. That this reduction would materially increase the trade, is obvious on the least reflection. That this reduction will be effected by the completion of the enlargement, can no longer admit a reasonable doubt.

In 1835, an estimate was made, under the direction of the canal commissioners, by four engineers, each taking a certain section of the proposed improvement. The fact, that this estimate falls very much below the cost of the work, so far as it has progressed, has been severely animadverted upon, and calls for some explanation of the discrepancy. I made the estimate for the section commencing at Albany, and extending 57 miles west. The principal object was to obtain an approximate estimate of different dimensions of enlargement. From two to three months was all the time given to make this examination, prepare plans and calculations of quantities and cost. No great accuracy could be expected from the limited time given. The aggregate of this estimate was about $12,500,000, and the damages for land would have increased it to, probably, about $14,000,000.

So far as I was concerned, this estimate was based on the following considerations, which have not been observed, so far, in the construction of the work—to wit:—

1st. The work was to be prosecuted no faster than the surplus tolls would afford funds. Whereas, it has been prosecuted much more rapidly, by additional funds, obtained by loans to a large amount, at a time when prices for labor and materials were high, and still further enhanced by putting a large amount under contract, within a short time.

2d. Only one set of locks was contemplated by the estimate; whereas, double locks of a very expensive character have been constructed in numerous cases. I do not contend that it was inexpedient to construct double locks; but the estimate should have the benefit of the additional set.

3d. The plan of work, embracing mechanical structures, was contemplated in the estimate, (so far as I was concerned,) to be plain and substantial; having regard to adequate strength and permanency, the convenience of the navigation, and proper symmetry in design; whereas, a very expensive

mode, in executing a large portion of the work, not necessary for strength and permanency, has, to a great extent prevailed. It is due to myself to say that I earnestly remonstrated against this, in the outset;—urging that it was unnecessary, and would eventually jeopard the success of the enterprise. In this I was supported by Commissioner Bouck, who has, in all my intercourse, manifested a deep interest in the success of the improvement. There were items of work, not embraced in the original canal, that have been added to the plan of enlargment, which were not decided on at the time of the estimate. I have no doubt some, and perhaps most of these will be beneficial to the improvement.

The enlargement proceeded to the close of 1841, when it was arrested in consequence of financial embarrassments. Since that time, a very limited amount of work has been done. The total expenditure, thus far, for work, damages for land, &c., has been about $13,000,000. The length of enlarged canal in use last season was near 36 miles, and 17 miles are to be put in use next spring, making 53 miles of canal in use and ready for use, and 228 structures. There are 40 structures completed, but not in use, not being connected, in consequence of other work unfinished. There are 117 structures in an advanced state—two-thirds done. It may be observed, that the more expensive parts, such as heavy sections of canal, large aqueducts of the first and second classes, and locks, are generally either completed, or in a high state of advancement. This accounts for the fact that, although only a small portion of the improvement is in use, more than half the expense has been incurred, leaving about $11,000,000, (by the revised estimate of the canal commissioners, made in 1839,) to complete it on the expensive plan on which the work has been commenced. Taking into consideration the present, or a fair price for labor and materials—an economical revision of the plans of work remaining to be done,—(I mean such a revision as is compatible with the present dimensions of the enlarged canal, and will secure all necessary permanence and convenience to the navigation) and a prosecution of the work at a rate of progress that will not enhance prices, there can be hardly a doubt, the remaining part of the enlargement may be completed for a much less sum than the above balance.

From the accumulation of deposit in the canal, and causes before alluded to, the average tonnage on down freight was reduced from 39 tons, in 1835, to 30 tons, in 1838. In consequence of this depression in the tonnage of boats, the canal commissioners gave greater attention to the repairs of the canal. They found the bottom in many places much filled with mud, sand, and gravel, which, in fact, had been gradually accumulating, and, probably, never thoroughly cleaned out since the first introduction of the water. It is one of the objects of the enlargement, by raising the banks, and at some places the levels, and, instead of dams, constructing culverts and aqueducts, to turn land floods and their sediment under the canal, and thus, to a great extent, relieve the canal from this impediment.

By proceeding with a more thorough system of cleaning out the bottom, and raising the banks, the average tonnage was gradually increased, and, in 1841, it had reached 36 tons. At this time, but little of the new work had been brought into use. In 1842, a portion of the new work, mostly between Albany and Schenectady, was brought into use at places where the old work was always embarrassing to the navigation. As the enlargment was now suspended, the commissioners made more vigorous efforts to clean out the bottom and raise the banks; which, with the new canal in use, so improved the navigation, that, in 1844, the average down tonnage of boats was about 60 tons, or double what it was in 1838.—Other circumstances contributed to this result. The boats were constructed more full in their bearing, and a greater portion devoted exclusively to freight.

Notwithstanding this increase of tonnage, there were 257 more lockages in 1844 than in 1838. The down freight in 1838, was 419,249 tons, and, in 1844, 871,537 tons. Consequently, all the efforts to improve the canal, and which have doubled its capacity, have only kept pace with the increasing trade. The tonnage of 1838 was a trifle greater than that of 1836; and, as the time from 1838 to 1844 may be too limited to present a fair statement of increase, I propose to take 1834, when the trade had no special cause to affect its magnitude.

I have not the means of ascertaining the tonnage of 1834, except by comparing the tolls, which afford a sufficient approximation. The tolls of 1844 were 85 per cent. greater than in 1834—a period of ten years. During this time there has been some reduction of tolls, the extent of which I cannot now state, but probably such as would show the tonnage to have increased nearly if not quite 100 per cent. It will be observed this increase has taken place since the time when the canal was so fully occupied, that further capacity was required. In my letter to Commissioner Bouck, before referred to, I gave it as my opinion, that the tonnage would be doubled in ten years, and urged this as a reason for adopting a liberal scale for the contemplated enlargement.

I have not noticed the return, or up freight, for the reason that, it being much less in tonnage than the down freight, the latter only is important in a calculation of capacity. The average price of freight on the canal may be taken at something above the charge of tolls; or the total charge of freight and tolls, at something over double the tolls. The total amount of tolls on the Erie canal, for the navigable year of 1844, was $2,190,147. The transportation may be assumed at $2,400,000, but say $2,200,000. If the enlarged work, when completed, will effect a reduction of half this sum, as it is believed has been conclusively shown, the annual saving on last year's trade, without considering the way trade, would be $1,100,000. This trade must increase for many years to come. For several years it has been contended by the opponents of this enterprise, that the freight furnished by the forest would fall off as rapidly as that of agriculture, &c., would increase; and, therefore, no material increase of tonnage would occur. This subject was very ably discussed last winter, in the report of H. Seymour, Esq., chairman of the Canal Committee, in the assembly. The document is one of great interest, in which the canal policy of this State is treated in a manly and able manner. By a statement in a late number of the Merchant's Magazine, it appears the tonnage from the forest, arriving at tide-water, from all the canals, in 1844, was 32 per cent. over that of 1843, and that the total tonnage arriving at tide-water, in 1844, was 30.6 per cent. greater than that of 1843, showing the increase from the forest to have been greater than from all other sources, that is, the ratio of increase has been greater. It thus appears, Mr. Seymour's views, that the tonnage would continue to increase for a long time to come, have been well sustained by the facts thus far. There can be no doubt that, if adequate provision is made to accommodate it, the trade of this canal will go on increasing for many years; and, if we allow twenty years for it to double the last year's business, no time should be lost in devising a system of proceeding that will bring the improvement into complete operation in the course of about eight years. When it is completed from Albany to Syracuse, the trade will derive great benefit; and, by the time it is wholly in operation, say about eight years from this time, the annual saving in transportation will not be less than $1,500,000. The improvement will be a self-producing cause of increasing trade. That which now will not bear charges of transportation, will enter its regular business. The area of country that will concentrate in this channel, will be enlarged in proportion to the increased facilities and economy secured for its accommodation.

In the report of the canal commissioners, of January, 1844, where, speaking of the lockages in 1843, they remark—"The rapidly increasing transportation of property on this canal, from those states bordering on the western lakes, will, undoubtedly, greatly add to the number of lockages." In their recent report, (January, 1845,) they remark—"The great increase of business on the canals has materially added to the number of lockages." Again, page 10—"If the business on the canals continues to increase, it will soon be indispensable to its accommodation to have double locks brought into use at all places from Albany to Syracuse."

If time permitted, I would show, from the reports of canal commissioners, the failing and deteriorating condition of many of the old structures and works on the Erie canal, and the difficulty, from its small section at several places, in passing a sufficient supply of lockage water, during the seasons of greatest pressure in its business. Much

more could be done, if the business was equally spread through the season of navigation, but such an arrangement is impracticable. The western lakes being closed in the winter, the products accumulated at their ports during the suspended navigation, will, at the opening of spring, rush to market, and supplies from the Atlantic market be immediately called for. Then again, after harvest, there will be an accumulated business in the fall trade.

In relation to the value of the enlarged canal, even for boats used on, and limited by the dimensions of the original work, the canal commissioners, in their report of Jan., 1844, remark—"those portions of the enlargement of the Erie canal, which are in use between Albany and Syracuse, and the construction of double locks on the enlarged plan at points most liable to detention and delay, have added greatly to the capacity of the canal, and to the certainty, safety, and expedition of transportation."

In their late report, (January, 1845,) the commissioners, in speaking of a section of about six miles of enlarged canal, embracing Scoharie creek, to be brought into use next spring, remark—"by this improvement the heavy annual expenses, to which the state has been heretofore subjected, in dredging the channels of the creeks, and in maintaining dams and towing path bridges, will be avoided; the injurious and vexatious delays, to which boats have been liable at the old locks, prevented, and inestimable benefits to the interest of all concerned in the navigation of the canal secured." The same report, when speaking of 11 miles of enlarged canal, also to be brought into use next spring, known as the Jordan level, the commissioners remark—"The canal will receive an additional supply of water from the Nine Mile Creek feeder; the expense of two lock tenders, and the repair of two locks and two aqueducts, that are in a dilapidated condition, will be saved, and the hazzard of interruption to the navigation will be greatly diminished."

The same report, in speaking of the locks near the upper Mohawk aqueduct, the commissioners remark—"During the busy portions of the season of navigation, these locks are in constant employment, and require the uninterrupted attendance of the lock tenders."

It therefore appears that, in regard to the convenience and economy of navigation—of repairs of canal, and also in regard to the increasing amount of the trade—the canal commissioners are deeply impressed with the usefulness of this improvement: and the friends of the enterprise do not appear to have over estimated its necessity and importance.

Several valuable and interesting public documents have at different times been published, which present many important particulars in relation to the subject under consideration. But the limited range of a single article, does not allow them to be further discussed.

The unproductiveness of the lateral canals has been much dwelt upon by the opponents of the enlargement of the Erie canal. The total length of the lateral canals is about equal to that of the Erie canal; while the tolls on the latter, for the last season were about 90 per cent. of the aggregate tolls of all the state canals. There can be no doubt, however, that the tolls on the Erie canal, have been increased by the trade brought to it by the lateral canals; but to what extent I am not able to say. That money has been, to a greater or less extent, unwisely expended on the lateral canals, there can be no doubt. But is this a sufficient reason why we should neglect the proverbially great avenue of internal commerce? an avenue passing through the central and most fertile portion of our own state, connecting with internal lakes, rivers and artificial canals, spreading its ramifications and usefulness to the great mass of our citizens; and uniting the most extensive inland lake navigation in the world, with one of the best river navigations!—Certainly no careful, intelligent, and candid examination of the subject will call for an abandonment of the enterprise, and leave its unfinished structures to point out to future times our incapacity to appreciate its importance.

To the city of New York, I regard the completion of the enlargement of the Erie canal as a question of great importance.—She has a deep interest in whatever tends to reduce the expense of interior transportation. She has already felt, in her accumulated millions, the effect of this canal as originally constructed. If I should undertake to estimate the benefits that have already flowed to the citizens of this state, in the advancement of their agriculture, manufactures and commerce, the amount would appear incredible. But the time has arrived when increased facilities are demanded for the accommodation of the increased and increasing trade. Great efforts are making to divert as much of this trade to other ports as is practicable. And while the citizens in the interior have a common interest with New York, in reducing the cost of transportation, and possess the means for doing so, is it consistent with an intelligent spirit of enterprise, and regard for the public interest, to fold our hands and remain idle?

Without questioning the policy that led to a suspension of the enlargement in 1842, there can be no question the canal finances are *now* in a condition that admits of a safe and sufficient system, gradual in its commencement, and looking to the completion of the enterprise at some eight years from this time, without increasing the state debt. There can be no reasonable doubt, the tolls at the end of six or eight years will amount to $3,000,000 per annum. The new work put in complete operation, the expense of repairs would be reduced probably to between $300,000 and $400,000;—and a surplus, applicable to the debt of $2,600,000 per annum, may be calculated upon at that time with confidence.

It has been urged that taxes had to be laid to support the canals, and the people will not submit to it. Few persons understand this process of financiering, which has thrown undeserved discredit upon the state canals. By laws of the state, $200,000 of canal tolls have been, and are, annually appropriated to the general fund; and the salt revenues, which have been created, and are sustained by the canals, amounting annually to about $100,000, have the same direction. Now the process is simply to take a portion of the canal revenues, appropriate them to the general fund, and then make up a part of the deficiency to the canal revenues from taxes; which should simply have been paid over in the first instance, to the general fund, and the canals left with their own revenues.

It is said we must pay the canal debt, before further progress can be made in the completion of the work. By the recent report of the comptroller of the State, it appears the total canal debt is $20,713,905; the annual interest, $1,126,397, and that he has on hand applicable to this debt, $2,691,225. This will reduce the debt to $18,022,680, on which the annual interest will be about $950,000. Add to this the annual cost of maintaining the canals, (which the last two years averaged $424,000,) for the last year was $464,334, and taking the whole sum of interest and repairs at the rate of last year, from the tolls of the last navigable year, $2,446,375, and there is a balance of $1,032,041; or, over $1,000,000 of surplus revenue. This surplus some propose to appropriate, after deducting what is carried to the general fund, to the extinguishment of the canal debt; and this improvement, (after more than half the expenditure necessary to complete it on the expensive plan that has been pursued,) is to be suspended from 15 to 20 years, until this debt is paid! Is it reasonable that the present generation shall pay the whole of this debt, with the improvement so far advanced, but unfinished; and the trade from which this great surplus revenue is derived, be allowed to suffer from inconvenient and inadequate accommodation during this long term? Can it be that such a proposition will meet the approbation of the calm and practical good sense of an intelligent people?

If the measure was one of doubtful usefulness, and there was reasonable ground to apprehend it would bring a burden upon the people, we should pause until the questions of usefulness and finance were well settled. It is not to be doubted that inexpedient expenditures have been made; but they are past, and can only be useful as beacons to guide us in the future. There is no reason, however, that because some have failed that *that* which is proverbially good should be neglected. The agriculturist would not be deemed wise, who, having lost his crop of oats, should therefore neglect to cultivate his corn.

It must be borne in mind that the Erie canal not only bears the deficiencies of the unproductive laterals, but also an expendi-

ture on its own unfinished (consequently mainly unproductive) enlargement, and on unfinished laterals of together some $15,000,000. It has proved itself capable of bearing all these, and has acquired under them so much vigor that it is now proposed to add to it the unpaying railroad debt of near $4,000,000. This is not all; for it is already proposed, as it increases in strength, not to complete its unfinished work, but to add other expenses of government. Now, a work that is expected to bear such burdens, is certainly entitled, on the score of revenue, to have the best care that circumstances will permit. It would, however, be doing it injustice, to limit its usefulness, by the measure of its tolls. The benefits conferred on the general interest of the State, to agriculture, arts and commerce, and the general socializing influence produced by easy intercommunication, far exceed the value of its tolls.

In the present condition of the canal finances, there can be no difficulty in proceeding with the enlargement of the Erie canal, on a scale that will annually bring more or less into use, and thereby improve the present navigation; and in a few years the whole may be completed, when its enhanced revenues will rapidly extinguish the debt; the holders of which will think themselves paid too soon.

I am aware that some persons are of the opinion that it is better to neglect the Erie canal, and depend on railroads to provide for the increasing trade. When it is considered that, on the completion of the enlarged Erie canal, a barrel of flour may be carried, exclusive of tolls, from Buffalo to New York for 15 cents, it will hardly be contended that railroads, judging from general experience in general trade, would be able to compete, in heavy freight, with the canal. To add present canal tolls would raise the cost to about 48 cents. For the promiscuous trade of the country, a canal boat, loaded at the canal port, and proceeding *without change of cargo to this city*, the great mart for the interior, has peculiar advantages. But it is not necessary to discuss this subject, for the avenue under consideration is of sufficient importance to require both railroad and canal of large capacity to meet its varied, great and growing wants.

When it is considered that the annual tonnage of the Erie canal, that arrives at, and departs from tide water, is about equal to all the tonnage that enters and clears from the port of New York, I am persuaded my fellow citizens will agree with me, in regarding the enlargement of the canal, as a work in which she has a deep interest. It is indeed the great internal pillar in her commercial fabric. The interior of the State is no less interested than the city; it is a common interest, to economize the transit of property, and serve the general interest of trade.

If the ample accommodation that is within our reach, is given to this trade, we may reasonably expect, at no great lapse of time after the work shall have been completed, its enhanced magnitude will be such, as to admit a reduction of tolls on such articles as are now able to bear only a moderate participation in the general trade, and ultimately a general reduction, and still leave abundant revenues to provide for its debt, and furnish means for other objects. Thus the trade would not only have the benefit of great economy in transportation, but also a reduction of tolls, which could not fail to produce incalculable advantages.

The subject is regarded as one of great general interest, and commends itself to the dispassionate consideration of an intelligent community. It should be viewed as above all partisan questions of policy, and treated as a matter in which the mass of our citizens has a common interest.

If we do not forget the inestimable benefits conferred on our own and other States, by the original work, we shall not fail to perceive the importance of now completing its enlargement, required to afford adequate provision for its greatly accumulated and increasing trade.

It will be perceived that no measures are here proposed to increase the canal debt, or to impair the ability of the canal revenues, to meet punctually the interest on the canal debt, and expenditures for repairs. It is merely to appropriate the canal revenues to canal purposes, and after the interest on the debt, and expense of repairs are paid, the annual surplus to be appropriated to complete the enlargement of the Erie canal. And if it should be regarded as important to continue the present appropriation of $200,000 from canal tolls to the general fund, there will still be left, on a calculation of tolls for the last navigable year, over $800,000 per annum to proceed with the work of enlargement.

A single remark on the question of canals as compared with railroads. It is very often observed that one, or the other, is the best mode to effect cheap transportation. I consider, that this question depends on circumstances. In the transportation of passengers and light freight, and such as requires winter transportation, a railroad posseses decided advantages; while for heavy freight, a large promiscuous trade, and more or less connected with natural navigation, a canal may be highly beneficial, even with a successful railroad by its side. With such a canal as the Erie, already in operation, possessing within itself the means of completing its own enlargement, so as to render it one of the most perfect artificial navigations in the world, it certainly would be unwise to abandon it, for any superiority that has yet been demonstrated in railroad transportation —far better for all interested in cheap carriage to have both canal and railroad.

There are situations where a canal would be impracticable, and yet a railroad may be a highly successful improvement.

It is not for the public interest that these improvements should be compared by a partisan view; but that each should be considered with reference to its adaptation to the local circumstances and trade that is to be accommodated. J. B. J.

MANUFACTURE OF IRON.

Most of our scientific readers are aware, that at the last annual meeting of the British Association for the advancement of Science, the council of that body granted £50 to Dr. Lion Playfair and Dr. Bunsen, of Marburg, for the purpose of enabling them to make certain experiments, with a view to discover the chemical theory of the manufacture of iron. For several months past, these two eminent chemists have been pursuing their interesting investigations separately, with what result the report of their labors will, no doubt, in due time, furnish ample information to the public. In order to compare notes with his colleague in this inquiry, and also for the purpose of visiting the iron districts of this country, Dr. Bunsen came to Manchester a few days ago, and is now on a visit to Staffordshire, accompanied by Dr. Playfair. Dr. Bunsen, who is professor of chimistry in the university of Marburg, has already attained no ordinary rank in the science to which he has devoted his talents: indeed, Berzelius speaks of him as one who will yet be named among the greatest chemists of Europe. Among many important discoveries attributed to him one of the most useful perhaps is that of an antidote for the poisonous effects of arsenic, which he found in the hydrated peroxide of iron, a simple preparation, and one which ought to have a place on the shelves of every druggist in the kingdom. In Germany, if we are rightly informed, every druggist and apothecary who sells the poison, is bound by law also to sell the antidote.—*Man. Guar.*

NICOLL'S PATENT SAFETY SWITCH for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee. G. A. NICOLLS,
ja15 *Reading, Pa.*

GEORGE VAIL & CO., SPEEDWELL IRON Works, Morristown, Morris Co., N. J.—Manufacturers of Railroad Machinery; Wrought Iron Tires, made from the best iron, either hammered or rolled, from 1⅛ in. to 2¼ in thick.—bored and turned outside if required. Railroad Companies wishing to order, will please give the exact inside diameter, or circumference, to which they wish the Tires made, and they may rely upon being served according to order, and also punctually, as a large quantity of the straight bar is kept constantly on hand.—Crank Axles, made from the best refined iron; Straight Axles, for Outside Connection Engines; Wro't. Iron Engine and Truck Frames; Railroad Jack Screws; Railroad Pumping and Sawing Machines, to be driven by the Locomotive; Stationary Steam Engines; Wro't. Iron work for Steamboats, and Shafting of any size; Grist Mill, Saw Mill and Paper Mill Machinery; Mill Gearing and Mill Wright work of all kinds; Steam Saw Mills of simple and economical construction, and very effective Iron and Brass Castings of all descriptions.

NEW JERSEY RAILROAD AND TRANSPORTATION COMPANY.

Length of Road, 33 96-100 miles. Capital, $2,000,000.
JOHN S. DARCY, Esq., President. ROBERT SCHUYLER, Esq., Vice President.
J. P. JACKSON, Esq., Secretary. J. WORTHINGTON, Esq., Treasurer.

Leave New York, foot of Courtland street.	DAILY. A. M.	DAILY. P. M.	SUNDAY. A. M.	SUNDAY. P. M.
For Newark	9, 11, 12	2, 3, 4 3-4, 6, 7 1-2	9	4 3-4
" Elizabethtown	9, 11	2, 3, 4 3-4, 6		
" Rahway	9, 11	3, 4 3-4, 6		
" New Brunswick	9	3, 4 3-4		
Leave New Brunswick	6, 7 1-2, 11 1-2	8 3-4	11 1-2	8 1-2
Rahway	6 3-4, 7, 8 1-4, 12	4 3-4, 9 1-4		
Elizabethtown	7, 7 1-2, 8 1-2, 10 1-2, 12	3 1-2, 5		
Newark	7 1-2, 8 1-4, 9, 11	1 1-2, 4, 5 1-2, 7, 9 3-4	11 3-4	9 3-4
For New York.				

9 A. M. and 3 P. M. to meet the Morris and Essex trains, and 9 A. M. and 4 3-4 P. M. to meet the Somerville train, and for Philadelphia.

TABLE OF DISTANCES AND FARES.

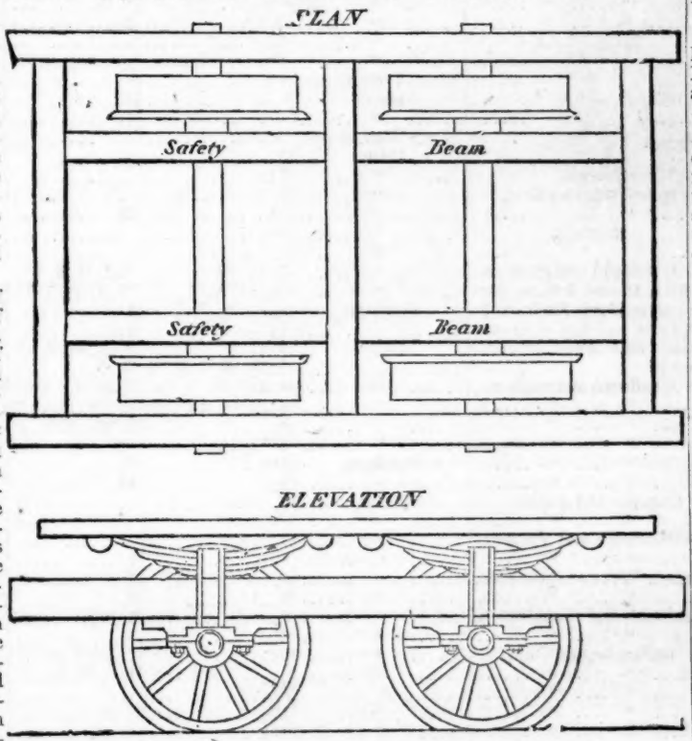
	New York.		Newark.		Elizabethtown.		Rahway.		N. Brunswick	
	Miles.	Cents.	Miles.	Cents.	Miles.	Cents.	Miles.	Cents.	Miles.	Cents.
New York			9 1-4	25	14 1-2	31 1-4	19 3-4	31 1-4	31 1-2	50
Newark	9 1-4	25			5 1-2	12 1-2	10 1-2	25	22 1-2	50
Elizabethtown	14 1-2	31 1-4	5 1-2	12 1-2			5	12 1-2	16 3-4	50
Rahway	19 3-4	31 1-4	10 1-2	25	5	12 1-2			11 3-4	37 1-2
New Brunswick	31 1-2	50	22 1-2	50	16 3-4	50	11 3-4	37 1-2		

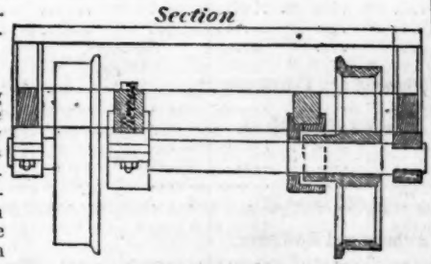
KITE'S PATENT SAFETY BEAM.

MESSRS. EDITORS.—As your Journal is devoted to the benefit of the public in general I feel desirous to communicate to you for publication the following circumstance of no inconsiderable importance, which occured some few days since on the Philadelphia, Wilmington and Baltimore railroad.

On the passage of the evening train of cars from Philadelphia to this city, an axle of our large 8 wheeled passenger car was broken, but from the particular plan of the construction, the accident was entirely unknown to any of the passengers, or, in fact, to the conductor himself, until the train, (as was supposed from some circumstances attending the case,) had passed several miles in advance of the place where the accident occurred, whereas had the car been constructed on the common plan the same kind of accident would unavoidably have much injured it, perhaps thrown the whole train off the track, and seriously injured, if not killed many of the passengers.

Wilmington, Del., Sept. 28, 1840.





☞ The undersigned takes pleasure in attesting to the value of Mr. Joseph S. Kite's invention of the Safety Beam Axle and Hub for railroad cars. They have for some time been applied to passenger cars on this road, and experience has tested that they fully accomplish the object intended. Several instances of the fracture of axles have occurred, and in such the cars have uniformly run the whole distance with entire safety. Had not this invention been used, serious accidents must have occurred.

In short, we consider Mr. Kite's invention as completely successful in securing the safety of property and lives in railroad travelling, and should be used on all railroads in the country.

JOHN FRAZER, Agent, JAMES ELLIOTT, Sup. Motive Power,
GEORGE CRAIG, Superintendant, W. L. ASHMEAD, Agent.

☞ A model of the above improvement is to be seen at the New Jersey railroad and transportation office, No. 1 Hanover st., N. York. ja45

WR. CASEY, CIVIL ENGINEER, NO. 23 Chambers street, New York, will make surveys, estimates of cost and reports for railways, canals, roads, docks, wharves, dams and bridges of every description, with plans and specifications. He will also act as agent for the sale or purchase of machinery, and of patent rights for improvements relating to public works.

SAMUEL NOTT, CIVIL ENGINEER, SURveyor and General Agent, Bangor, Me. Railroads, Common Roads, Canal, Factory and Mill Sites Towns, Farms, Wild Land, etc., surveyed. Plans and Estimates for Buildings, Bridges, etc., prepared, and all appertaining business executed.

— REFERENCES. —

Boston, { Col. James F. Baldwin, Civil Engineer. Col. J. M. Fessenden, " "

Wm. Parker, Esq., Engineer and Superintendent Boston and Worcester railroad. ja45

PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, *Agent.*

Albany Iron and Nail Works, Troy, N. Y.

The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Etting, Philadelphia; Wm. E. Coffin & Co., Boston.

MACHINE WORKS OF ROGERS, KETCHum & Grosvenor, Patterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works beingexten sive and the number of hands employed beinglarge, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders ; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery

of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
a45 Paterson, N. J., or 60 Wall street, N. York.

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. York, will be punctually attended to.

HENRY BURDEN, *Agent.*

Spikes are kept for sale, at Factory Prices, by I. & J. Townsend, Albany, and the principal Iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

*** Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufcturing so as to keep pace with the daily increasing demand. ja45

TRAINS LEAVE	FOR	BY RAILROAD	DAYS.	A. M.	P. M.	MILES.	FARE.
Boston	Portland	Eastern,	Daily,	7½,	2½,	106	$3 00
"	Portsmouth	"	"	7½,	2½, 4½,	54	2 00
"	Newburyport	"	"	7½,	2½, 4½,	35	1 25
"	Salem	"	"	7½, 9, 11½,	2½, 3½, 4½, 6,	14	50
"	Portland	Boston and Maine,	"	7½,	2½,	109	3 00
Portland	Boston	" "	"	7½,	3,	109	3 00
Boston	Lowell	Boston and Lowell,	"	7, 11,	2, 5,	26	75
Lowell	Boston	" "	"	7½, 11,	2, 4½, 5½,	26	75
Boston	Concord	Concord,	"		3½,	76	2 00
Concord	Boston	"	"		3½,	76	2 00
Boston	Nashua	Nashua and Lowell,	"	7, 11,	5,	41	
Nashua	Boston	" "	"	6½,	1½, 5,	41	
Boston	Worcester	Boston and Worcester,	"	7, 9,	2½,	44	1 25
Worcester	Boston	" "	"	7, 10,	6,	44	1 25
"	"	" "	Sundays,	7,			
Boston	Worcester	" "	"		2,		
Boston	New York via Norwich	" "	Mon., Wed. & Fri.,		4,		
"	" " L. Island railroad	" "	Tues., Thur. & Sat.,	7,			
"	" " New Haven	" "	Daily,	9,	2½,		
"	Albany	Western,	"	9,	2½,	200	6 00
Albany	Boston	"	"	8½,	1½,	200	6 00
Springfield	Boston and Albany	"	"	7,	3,		
Boston	New York via New Haven	"	"		2½,		
Charlestown	West Acton	Fitchburg,	"	8,	1, 4½,		
West Acton	Charlestown	"	"	7½, 10½,	5,		
Boston	New York, via Steamboat trains	Boston and Stonington,	Tues., Thur. & Sat.,		4½,		
"	" " "	Boston and Newport,	Mon., Wed. & Fri.,		4½,		
"	Providence	" "	Daily,	7½,	4,	41	1 50
Providence	Boston	" "	"	On arrival of the	mail.	41	1 50
Taunton	"	" "	"	8,	4,		
New Bedford	Boston	" "	"	7½,	2½,		
Boston	Dedham	" "	"	8½,	3, 6½,		
Dedham	Boston	" "	"	7, 10,	5½,		
New York	Greenport	Long Island,	"	7½,		95	2 25
Brooklyn	Hicksville & intermediate places	"	"	9½,		26	56¼
"	Greenport " "	"	Tues., Thur. & Sat.,	9½,		95	2 25
"	Hicksville, (Saturd'y to Suffolk)	"	Daily,		4,	26	56¼
Greenport	Brooklyn, (Boston train)	"	"		1,	95	2 25
"	" (accommodation do.)	"	Mon., Wed. & Fri.,			95	2 25
Hicksville	" & intermediate places	"	Daily,	7,	1½,	26	56¼
New York	Albany & Boston via N. Haven	Steamer,	"	6½,			5 00
"	Middletown	New York and Erie,	"	8, 3,		53	
Middletown	New York	" "	"	6½,	3½,	53	
Philadelphia	Pottsville	Reading,	"	9,		94	3 50
Pottsville	Philadelphia	"	"	9,		94	3 50
New York	Newark	N. J. railroad and trans. co., [9 A. M. *and* 3 P. M., *connect with Morris Railroad.*]	"	9, 11, 12,	2, 3, 4½, 6, 7½,	9½	25
Newark	New York		"	7½, 8½, 9, 11,	1½, 4, 5½, 7, 9½,	9½	25
"	"		Sundays,	9,	4½,	9½	25
New York	Newark	[9 A. M. *and* 4½ P. M., *trains, connect with Somerville Railroad.*]	"	11½,	9½,	9½	25
"	Elizabethtown		Daily,	9, 11,	2, 3½, 4½, 6,	14½	31½
Elizabethtown	New York		"	7, 7½, 8½, 10½, 12,	3½, 5,	14½	31½
New York	Rahway	N. J. railroad and trans. co.,	"	9, 11,	3, 4½, 6,	19½	31½
Rahway	New York	" "	"	6½, 7, 8½, 12,	4½, 9½,	19½	31½
New York	New Brunswick	" "	"	9,	3, 4½,	31½	50
New Brunswick	New York	" "	"	6, 7½, 11½,	8½,	31½	50
"	"	" "	Sundays,	11½,	8½,	31½	50
New York	New Brunswick	" "	"	9,	4½,	31½	50
Philadelphia	New York	Camden and Amboy,	Daily,	7,		91	3 00
New York	Philadelphia	" "	"	5½,		91	3 00
Philadelphia	Bristol	Philadelphia and Trenton,	"	9,		30	75
Bristol	Philadelphia	" "	"		4,	30	75
Philadelphia	Baltimore	Philad. Wil. and Baltimore,	"	8,	4,	93	
Baltimore	Philadelphia	" "	"	9,	8,	93	
"	Washington	Baltimore and Washington,	"	9,	5, 11½,	41	2 50
Washington	Baltimore	" "	"	6,	5½,	41	2 50
Baltimore	Cumberland and inter. places	Baltimore and Ohio,	"	7½,			
"	Frederick " "	" "	"		4,		
Cumberland	Baltimore	" "	"	8,			
Hancock	"	" "	"	10½,			
Martinsburg	"	" "	"	11½,			
Harper's Ferry	"	" "	"		12½,		
Frederick	"	" "	"		2,		
"	"	" "	Sundays,	8,			
"	"	" "	Daily,	7½, 12,	4½,		
Ellicott's Mills	Petersburg	Richmond and Petersburg,	"	10½,	1½,		
Richmond	Richmond	" "	"	5½,			
Petersburg	Schenectady	Mohawk and Hudson,	"	8,	5½,		
Albany	Albany	" "	"	9,	3½,		
Schenectady	Saratoga	" "	"	7½,	2,		
Albany	Albany	" "	"	7,	12½, 5,		
Saratoga	Saratoga	Troy and Saratoga,	"		3½,		
Troy	Troy	" "	"	7½,			
Saratoga	Rochester	Auburn and Rochester,	"	8½,			
Auburn	Auburn	" "	"	8,	3,		
Rochester	Buffalo	Rochester and Buffalo,	"		3,		
Buffalo	Rochester	" "	"				
"	Falls	Buffalo and Falls,	"	9,			
Falls	Buffalo	" "	"		1½,		
Buffalo	Albany	Albany and Buffalo	"	8½,			